

The disruption of blockchain technology in accounting: a review of scientific progress

Javier Parra-Domínguez and Laura Sanz Martín

BISITE Research Group, University of Salamanca, Salamanca, Spain, and

Germán López Pérez and José Luis Zafra Gómez

Department of Financial Economics and Accounting, University of Granada, Granada, Spain

Abstract

Purpose – The purpose of this study is to explore the disruptive potential of blockchain technology in the field of accounting. By conducting a systematic review and bibliometric analysis, the research aims to identify key clusters and trends that illustrate how blockchain can transform traditional accounting practices. This includes improving transparency, enhancing data security, automating processes and integrating emerging technologies such as artificial intelligence. This study also seeks to highlight current research gaps, challenges in practical implementation and the future impact of blockchain on governance and financial systems.

Design/methodology/approach – This study uses two main methodologies: a systematic literature review and bibliometric analysis. The systematic review follows the PRISMA 2020 guidelines to identify and analyze relevant articles from Scopus, Web of Science and EBSCO databases, using specific search equations related to blockchain and accounting. A bibliometric analysis was conducted using VOSviewer to identify key clusters and trends within the collected literature. Clustering techniques, such as exploratory factor analysis,

© Javier Parra-Domínguez, Laura Sanz Martín, Germán López Pérez and José Luis Zafra Gómez. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

Corrigendum: It has come to the attention of the publisher that the article “The disruption of blockchain technology in accounting: a review of scientific progress” by Parra-Domínguez, J., Sanz Martín, L., López Pérez, G., and Zafra Gómez, J.L., published in *Journal of Accounting & Organizational Change*, Vol. ahead-of-print No. ahead-of-print, <https://doi.org/10.1108/JAOC-10-2024-0327>, contained an error in the acknowledgments section. “This activity was conducted as part of the Strategic Project Cybersecure platform for the exchange of digital tokens based on low-power distributed registration technologies (CSDT) (C075/23), established through a collaboration agreement between the National Institute of Cybersecurity (INCIBE) and the University of Salamanca. It falls within the framework of the Recovery, Transformation and Resilience Plan, funded by the European Union (Next Generation). This Spanish government initiative serves as a roadmap for modernizing the economy, fostering economic growth and creating jobs, ensuring a robust, inclusive and resilient recovery from the COVID-19 crisis while addressing the challenges of the coming decade. This work was supported by Ministry of Science and Innovation (Grant/Award Nos. PID2021–128713OB–I00, MCIN/AEI/10.13039/501100011033/ y por FEDER Una manera de hacer Europa). The International Chair in Blockchain for Cybersecurity (CyberChain), (C058/23).” has now been corrected to: “This activity was conducted as part of the Strategic Project Cybersecure platform for the exchange of digital tokens based on low-power distributed registration technologies (CSDT) (C075/23), established through a collaboration agreement between the National Institute of Cybersecurity (INCIBE) and the University of Salamanca. It falls within the framework of the Recovery, Transformation and Resilience Plan, funded by the European Union (Next Generation). This Spanish government initiative serves as a roadmap for modernizing the economy, fostering economic growth and creating jobs, ensuring a robust, inclusive and resilient recovery from the COVID-19 crisis while addressing the challenges of the coming decade. This work was supported by Ministry of Science and Innovation (Grant/Award Nos. PID2021–128713OB–I00, MCIN/AEI/10.13039/501100011033/ y por FEDER Una manera de hacer Europa).” The authors apologise for this error and for any inconvenience caused.

This activity was conducted as part of the Strategic Project Cybersecure platform for the exchange of digital tokens based on low-power distributed registration technologies (CSDT) (C075/23), established through a collaboration agreement between the National Institute of Cybersecurity (INCIBE) and the University of Salamanca. It falls within the framework of the Recovery, Transformation and Resilience Plan, funded by the European Union (Next Generation). This Spanish government initiative serves as a roadmap for modernizing the economy, fostering economic growth and creating jobs, ensuring a robust, inclusive and resilient recovery from the COVID-19 crisis while addressing the challenges of the coming decade. This work was supported by Ministry of Science and Innovation (Grant/Award Nos. PID2021–128713OB–I00, MCIN/AEI/10.13039/501100011033/ y por FEDER Una manera de hacer Europa).



were applied to explore the relationships among documents, keywords and authors, providing insights into the evolution of blockchain's impact on accounting practices.

Findings – The results of this study reveal four primary clusters in the intersection of blockchain and accounting: CryptoLedger Accounting Network, TransparentChain Trust Framework, IntelliLedger Accounting Tech and DigiGov Ledger Insights. These clusters highlight key areas where blockchain technology is transforming accounting practices, such as enhancing transparency and trust in supply chains, integrating artificial intelligence for accounting automation and improving data security. The bibliometric analysis also identified emerging trends, including the increasing relevance of smart contracts, the challenges of integrating blockchain with existing systems and the need for updated regulatory frameworks.

Practical implications – In this sense, this paper presents several theoretical and practical implications, as well as identifying possible limitations and gaps in current knowledge, providing new opportunities for the establishment of future lines of research, such as robust regulatory frameworks, privacy and security considerations, and the practical implementation of blockchain solutions in real-world accounting scenarios.

Originality/value – This study provides a unique contribution by synthesizing the disruptive impact of blockchain technology on accounting through a combination of systematic literature review and bibliometric analysis. By identifying four distinct research clusters, this paper offers fresh insights into how blockchain integrates with accounting practices, particularly in transparency, automation and security. It also highlights emerging challenges and research gaps, such as regulatory frameworks and practical implementation. The originality lies in the comprehensive exploration of blockchain's multifaceted role in modernizing accounting, offering valuable guidance for both academics and practitioners navigating this evolving field.

Keywords Blockchain technology, Accounting, Systematic review, Bibliometric analysis

Paper type Literature review

1. Introduction

Accounting is considered by many to be one of the oldest professions in history (Zhang *et al.*, 2021), with the double entry method being the basis of modern accounting (Sangster and Scataglinibelghitar, 2010; Pascual Pedreño *et al.*, 2021; Nguyen *et al.*, 2024). Although some authors trace the origin of double entry to Benedetto Cotruglio Raueo (Pascual Pedreño *et al.*, 2021), this method is attributed to Luca Bartolomeo de Pacioli (Pacioli, 1514; Grigg, 2005; Faccia and Mosteanu, 2019) who, with his work “Summa de Arithmetica” (1458) and probably influenced by Muslim accounting practice (Zaid, 2000; Faccia and Mosteanu, 2019), emphasized the necessity and relevance of keeping a detailed record of the transactions carried out in all commercial activity, thus giving rise to the concept of double entry (Soll, 2014; Pascual Pedreño *et al.*, 2021; Mosteanu and Faccia, 2020). The double-entry system not only laid the foundation for the modern system of accounting records, but also marked the beginning of the profession (Sangster, 2016).

However, this method of accounting has been widely criticized by academics and practitioners in the field. Although this system can facilitate accurate economic and financial reporting (Cai, 2021), such a system can lead to confusion (Faccia and Mosteanu, 2019), as well as potential manipulation (Urdaneta Camacho *et al.*, 2025; Monterrey Mayoral and Rabazo Martínez, 2025). Although accounting malpractices have been a persistent problem throughout history, globalization has highlighted the relevance of addressing such challenges (Faccia and Mosteanu, 2019; Oteo *et al.*, 2025) and Cai (2021) argues that encouraging greater information transparency is one way to curb fraud.

As a result, accounting and auditing have developed to promote mutual trust and investor protection (Yu *et al.*, 2018). The accounting manual is now more than 4,000 pages long and is constantly updated to reflect new business practices. In 2000, XBRL emerged as a specialized language for the accounting industry with the aim of standardizing financial reporting (Mosteanu and Faccia, 2020; Sanz-Martín *et al.*, 2025).

In response to the economic crisis experienced between 2007 and 2008, the article Bitcoin: a peer-to-peer electronic money system (Nakamoto, 2008) introduces two ideas that have had a

great impact, the decentralized currency “Bitcoin” and the notion of the blockchain. Therefore, we could say that the blockchain has its origins in the need to provide a secure, private, unalterable and user-verified exchange structure in a decentralized network that allows transactions between individuals of value, not dependent on any state or body that supports it.

Blockchain-based accounting systems offer transparent, immutable and cryptographically secure processes, reducing the time and effort spent on daily record-keeping. They also eliminate the time-consuming accounting routine, allowing more valuable tasks to be performed. The adoption of blockchain in accounting can improve efficiency, transparency and reduce the risk of fraud through automation and double-checking of transactions (Maffei *et al.*, 2021).

The implementation of a blockchain network would allow for improved security in operation and protection based on decentralized records that enable the tracking of recorded information, seamless synchronization of accounting records, flexibility in communications through the architecture provided to the user, and automation and simplification of accounting and control. Blockchain technology, a decentralized record-keeping system, would also allow the state to intervene in the operations and accounting of certain companies, simplifying and improving procedures such as tax collection (Huson *et al.*, 2023).

Concretely, the contributions of these authors (Huson *et al.*, 2023) identifies four main research trends: the determinants of audit independence and quality in an IT environment, the challenges of applying blockchain in auditing and accounting, the use of AI for analyzing accounting data and the impact of modern technological systems on future auditor performance. These findings suggest potential future research directions to explore the significant impact of technology on the auditing profession.

Driven by the inherent advantages of blockchain over traditional systems, the integration of blockchain technology into accounting is characterized by significant advances in the ways in which financial transactions are recorded, maintained and confirmed. These advances are based on transparency, decentralization and cryptography. Immutable blocks cryptographically connected to create an unalterable transaction record provide data integrity. Unauthorized changes are severely hampered by this system, which is essential for the accuracy of accounting records. In the same vein, previously unheard-of levels of traceability and transparency are provided, giving everyone access to a single consensus-based truth and enabling accurate and efficient regulatory compliance and audit procedures (Al-Okaily, 2024).

In addition, by cutting out intermediaries, smart contracts automate agreements and change the way contractual responsibilities, payments and revenue recognition are handled, while reducing related costs and time. The decentralized nature of blockchain technology can lead to lower transaction costs, which can improve overall operational efficiency. In addition, distributed consensus techniques and public key cryptography, which are fundamental to protecting financial data and thwarting fraud, underpin the security of blockchain networks.

Before moving on to Section 2, it is important to have a basic understanding of blockchain technology. Blockchain technology is described as a system in which specific processes are implemented and developed through the utilization of cryptography and consensus protocols by a network of peer-to-peer nodes connected via the Internet (Bible *et al.*, 2017). Specific tasks are performed and decisions are made by all network participants, with an identical copy of the ledger recording all operations being maintained by each participant.

Distributed and non-distributed systems can be used to classify accounting information systems, particularly the general ledger recording transactions. Each copy is stored in a single location in non-distributed ledgers, such as an accountant’s personal computer, allowing the original file to be modified by anyone accessing it. In contrast, each copy is stored in different locations across the entire user network with distributed ledgers such as blockchain (Wright and De Filippi, 2015). Due to the distribution of different copies of the

original file in various locations controlled by entities with different interests, a file cannot be modified without other network users noticing (Tan and Low, 2017).

Smart contracts, essential for applying blockchain technology in accounting practice and information systems (Szabo, 1994), are programs that enable a set of actions to be automatically executed when specific conditions arise (Ante, 2021). The rise of blockchain technology has made the development of smart contracts possible, although their theoretical implementation was designed by Nick Szabo in the 1990s (Szabo, 1996; Szabo, 1997).

Once implemented, communication and consensus protocols would be used to deploy the code on a network of servers to keep the code stored immutably. The advent of Bitcoin in 2008 (Nakamoto, 2008) marked the first large-scale implementation of this concept.

Human intermediaries can be prevented from verifying transactions within the system by using smart contracts in a blockchain system (Yermack, 2017). However, there are risks associated with using smart contracts, such as vulnerability to attacks and the requirement for reliable and truthful information sources, which sometimes requires the use of oracles (Mezquita et al., 2022).

Despite these risks, specific control protocols could be programmed by auditors with the aim of monitoring specific accounting processes or the principal financial processes of the organization, considering the earlier premises.

In this context, and despite the significant growth of the literature on this field of study in recent years, the changing and rapidly evolving nature of this topic means that there are still key areas that have not been fully addressed or have been partially ignored. Among them, the absence of empirical studies that analyze how companies apply blockchain technology in real-world contexts, or the lack of solid proposals for the design of robust regulatory frameworks, highlight the need to redirect the attention of future work toward these fundamental aspects. Thus, this study carries out an exhaustive analysis of the current literature and a bibliometric analysis, which not only provides a current overview of the knowledge in this field, but also allows us to identify the main trends and future directions, especially relevant given the rapid evolution of this technology.

In this sense, this article is structured as it follows. First, we will present the methodology of the systematic review. Then, the results of the bibliometric analysis are presented, as well as the clustering of the papers and the development of the clusters. Finally, the conclusions of the study will be presented.

2. Methodology

Two main techniques are used to develop the research. A literature review comprehensively examines previous research on a specific topic. This overview informs the reader about what is known about a topic and what remains to be clarified, thus providing a basis for the justification or need for further research. The latter addresses precisely what the literature review has identified as unexplored areas (Denney and Tewksbury, 2013). In this context, Oludapo et al. (2024) investigate why many digital transformations fail, highlighting key themes and causes related to these failures and offers recommendations for future research in this area.

In addition, bibliometric analysis represents a crucial technique often used to examine and scrutinize large volumes of scientific data (Singh et al., 2023; Rabbani, 2024). Clustering is a method used to organize and visualize bibliometric data more coherently. By creating thematic or social groupings, it is possible to discern relationships between related documents, authors or critical terms in the research field. Techniques such as exploratory factor analysis, hierarchical clustering and other clustering algorithms are valuable in performing this task. Through clustering, the detection of patterns and trends within a research field is facilitated, allowing for an understanding of its development and evolution over time. Therefore, bibliometric analysis and clustering techniques emerge as powerful tools for analyzing and understanding scientific research and its dynamics (Donthu et al., 2021). The study by Kaushik et al. (2023) uses an integrated bibliometric and

unsupervised machine learning approach, specifically latent Dirichlet allocation (LDA), to analyze 3844 documents from Scopus and Web of Science. Bibliometric analysis identifies influential research trends, while LDA uncovers latent themes and clusters within the social entrepreneurship literature, thereby providing a comprehensive understanding of the field.

A literature review was carried out to identify the relationships between artificial intelligence (AI) and financial markets following the PRISMA methodology. In 1987, it was detected that medical study reviews did not meet a set of eight explicit scientific criteria, and a method was proposed to improve the quality with 23 items in six primary areas: study design, combinability, bias control, statistical analysis, sensitivity analysis and application of results. In 1996, the QUORUM conference (The Quality of Reporting of Meta-analyses) was convened, resulting in the QUORUM checklist and a flowchart describing the preferred way of presenting the sections of a systematic review or meta-analysis report: abstract, introduction, methods, results and discussion. In 2009, QUORUM was updated to address various conceptual and practical advances in the science of systematic reviews and was renamed PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses).

In 2020, it was updated to include new reporting guidelines and was renamed PRISMA 2020 (Page *et al.*, 2021).

In 2021, a “PRISMA for searches” (PRISMA-S) guide was added and published to improve bibliographic searches, serving as a basis for the fundamentals of the systematic review.

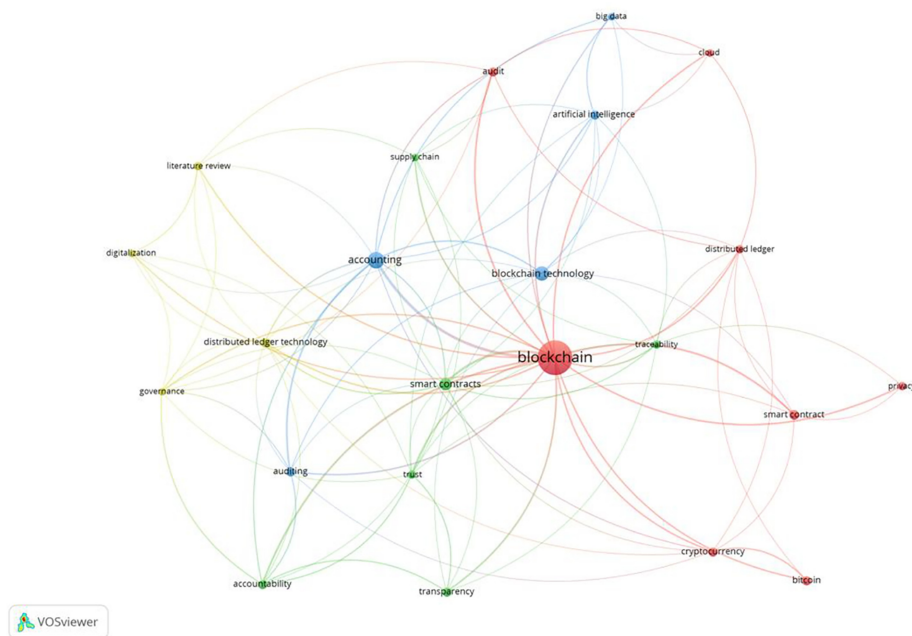
A systematic review was carried out in which articles were selected from the three most widely used databases in the scientific community: Scopus, Web of Science and EBSCO. The search equation was “(accountability OR accounting) AND blockchain” in Scopus and EBSCO and (ALL=(accounting)) OR ALL=(accountability)) AND ALL=(blockchain). With these equations, 87 articles were extracted from Scopus, 22 articles from WoS and 40 from EBSCO.

However, there are certain limitations to the selection process. Despite providing extensive access to academic literature, Scopus, Web of Science and EBSCO all contain built-in biases that could compromise the review’s thoroughness. Language bias, with a preponderance of English-language publications, which may exclude important studies from non-English-speaking regions; coverage bias, as these databases tend to prioritise high-impact journals, which may overlook emerging or niche research; and time delays in indexing recently published research are some of these. Furthermore, different databases have different indexing criteria and algorithms, which results in uneven coverage. In addition, some databases place more focus on particular disciplines than others, which may restrict the scope of interdisciplinary study. Consequently, even though these databases offer useful resources, it is important to recognize their limitations and take into account supplementary sources to guarantee a more thorough and impartial analysis.

3. Results

Data collection is performed using specific search equations tailored to the study’s objectives. Bibliometric clustering is executed using VOSviewer, resulting in distinct clusters that form the basis for further analysis.

Figure 1 shows how certain terms are related to each other through their joint frequency in a data set. In this figure, the terms are grouped into clusters, each representing a different subject area within the field of blockchain and related technologies. In the first cluster, we find the following keywords: blockchain, audit, cloud, distributed ledger, smart contract, privacy, cryptocurrency and bitcoin. This cluster groups terms that reflect practical applications and fundamental components of blockchain technology. The presence of terms such as “audit” and “privacy” indicates a focus on security and transparency, while “cryptocurrency” and “bitcoin” point to the relevance of digital currencies within this cluster.

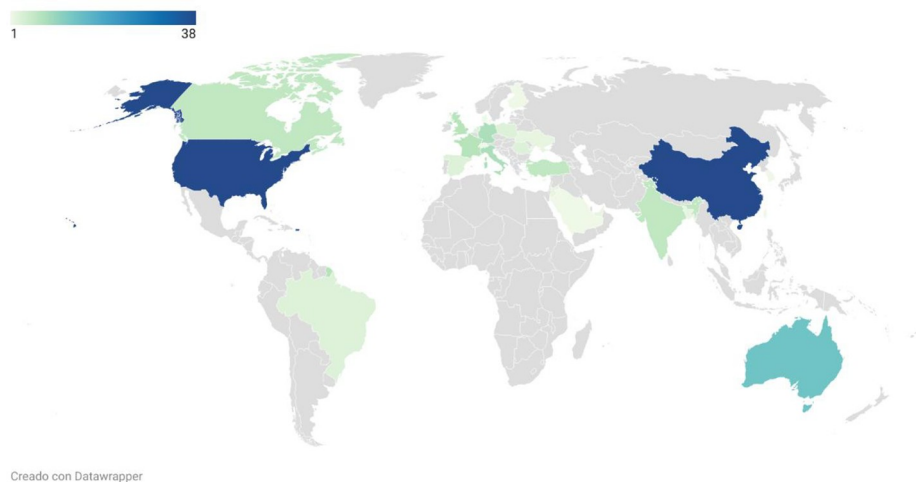


Source(s): Authors' own creation

Figure 1. Network display of clusters

In the second cluster, we have the terms blockchain technology, accounting, AI, big data and auditing. This cluster highlights the intersection of blockchain technology with accounting and emerging technologies such as AI and big data. The terms “accounting” and “auditing” suggest an interest in how blockchain can improve accuracy and efficiency in these fields through the use of advanced data and algorithms. The third cluster covers smart contracts, supply chain, transparency, trust and accountability. The terms in this cluster focus on the application of smart contracts in supply chain management, emphasizing improved transparency, trust and accountability. This suggests research focused on how smart contracts can automate and secure transactions within the supply chain. Finally, the fourth cluster has as keywords: distributed ledger technology, literature review, digitalization and governance. This cluster has a more theoretical and strategic focus, with terms suggesting an academic review and analysis of distributed ledger technology (DLT), its role in digitalization and governance aspects. “Literature review” indicates an in-depth analysis of previous research, while “governance” points to the importance of regulation and management in the implementation of DLT.

Figure 2 shows the number of articles published by country, revealing a clear inequality in global scientific production. China and the USA lead with 38 publications each, reflecting their dominant role in world research. Australia (14), Germany and Italy (8) are in a prominent position, while other European countries such as France and the UK also have a good number of publications (7). Countries such as Turkey, Canada and India (6) are seeing moderate growth, while several Eastern European and Latin American countries, such as Poland, Romania, Brazil and Spain (3), show a lower contribution. Countries with lower

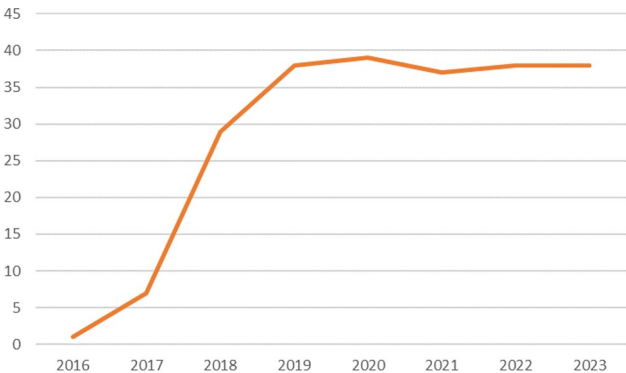


Source(s): Authors' own creation

Figure 2. Number of articles published by country

publications (1 or 2), such as Jordan, United Arab Emirates, Cyprus, South Korea and others, reflect a more limited scientific output, possibly due to restrictions in resources or research infrastructure. In summary, the graph highlights the dominance of large economies such as China and the USA in global science, while other countries, especially in Asia and Eastern Europe, show growth in their scientific contributions, albeit with fewer resources and visibility.

Figure 3 shows the number of articles published per year of our review, which reveals a clear sustained growth in publications on blockchain and accounting between 2016 and 2023. From a single publication in 2016, the number of articles increased significantly,



Source(s): Authors' own creation

Figure 3. Number of articles published per year of our review

reaching 7 in 2017 and 29 in 2018, reflecting the growing interest in the application of blockchain in accounting. In 2019, the number of publications reached its first significant peak with 38 articles, and this level remained stable in 2020 (39), 2021 (37), 2022 (38) and 2023 (38). This pattern suggests that, although the rate of growth has slowed in recent years, the topic remains highly relevant and continues to be an active area of research at the intersection of blockchain technology and accounting.

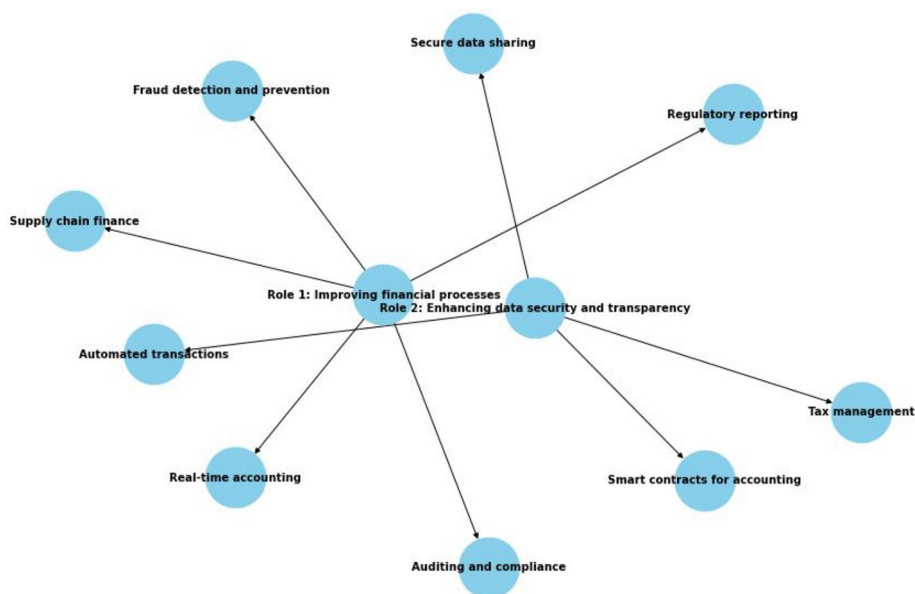
In Figure 4, we can see the journals that have the most publications from our review, these reflect a mix of publications specializing in technology and accounting areas. Journals such as *IEEE Transactions on Systems*, *IEEE Internet of Things Journal* and *IEEE Communications Surveys* are focused on technology and systems, addressing how blockchain technology can integrate with IT infrastructure and communication systems, which is fundamental to digital accounting. On the other hand, journals such as *Journal of Financial Reporting and Accounting*, *Accounting, Auditing and Accountability Journal* and *Journal of Emerging Technologies in Accounting* focus more directly on accounting, auditing and the adoption of emerging technologies such as blockchain in the financial sector. The *Journal of Information Systems* and *Technological Forecasting and Social Change* highlight the intersection of technology with social sciences and economics, while journals such as *Security and Privacy* address key questions about the security of blockchain transactions, a crucial aspect in its accounting application. Overall, the journals on the list reflect a growing and multidisciplinary interest in blockchain research within the accounting and finance field.

In Figure 5, we see the two roles that can be differentiated from our articles, as well as the topics associated with them. We can see how the role of improving financial processes can be associated with regulatory reporting, fraud detection and prevention, supply chain finance, automated transactions, real-time accounting and auditing and compliance. The other role would be enhancing data security and transparency, which is associated with secure data sharing, tax management, smart contracts for accounting and automated transactions.



Source(s): Authors' own creation

Figure 4. Journals with most publications from our review



Source(s): Authors' own creation

Figure 5. Roles of blockchain in accounting

4. Clustering

Bibliometric analysis is particularly useful for identifying different thematic areas within a field of knowledge, which will allow us to identify what is being published on the subject and thus facilitate the identification of future lines of research (Campobasso and Boscia, 2022; Lopez Pérez *et al.*, 2023; Navarro-Galera *et al.*, 2024). Thus, after entering the information on each of the articles selected for analysis, VOSviewer groups the terms by proximity using an algorithm that generates clusters that share thematic similarities (Van Eck and Waltman, 2010). Once the grouping of articles based on different themes has been identified (see Figure 1), it is necessary to carry out an exhaustive analysis of each of the selected articles.

After reading each of these articles, four primary clusters are identified: CryptoLedger Accounting Network, TransparentChain Trust Framework, IntelliLedger Accounting Tech, and DigiGov Ledger Insights. A meta-analysis is conducted on each, synthesizing findings from the most relevant papers.

Regarding the first cluster, the *CryptoLedger Accounting Network* is a cluster that has been effectively synthesized to merge blockchain technologies and contemporary accounting practices. *CryptoLedger* is represented as the amalgamation of cryptocurrencies and distributed ledgers, which are fundamental pillars in blockchain and modern accounting. The *Accounting* part of the name is emphasized as directly relevant to these technologies in the accounting realm. At the same time, *Network* highlights the interconnection and distributed structure inherent in technologies such as blockchain and cloud computing, underscoring their growing role in the world of accounting and finance. This term encapsulates not only the fundamental concepts of the cluster but also the interrelation and synergy between blockchain and current accounting methodologies. The *TransparentChain Trust Framework*

for the second cluster has been conceptualized as highlighting the importance of transparency and trust in processes and transactions, particularly in supply chain and traceability. The transparency and traceability in the supply chain are symbolized by *TransparentChain* proposing a system or platform that ensures clarity and visibility. On the other hand, the *Trust Framework* is called the generation of trust through accountability and smart contracts, establishing a solid framework for trust. This name encapsulates an approach where transparency and faith are essential, emphasizing traceability and accountability as vital elements for the integrity and reliability of operations. It indicates the crucial role of smart contracts in facilitating these principles in a digitalized and automated environment. Regarding the third cluster, an innovative fusion between traditional accounting and emerging technologies has been encapsulated in *IntelliLedger Accounting Tech*. The integration of AI and blockchain technology in accounting record systems is represented by *IntelliLedger* suggesting a significant evolution in how accounting data are handled and processed. The *Accounting Tech* part of the name reflects the practical application of these advanced technologies in accounting, highlighting a shift toward modernization and technological innovation in accounting and auditing practices. This term underscores the synergy between existing accounting methodologies and new technologies such as AI and blockchain, indicating a progressive and technologically sophisticated approach in accounting and auditing and marking a redefinition and enrichment of accounting processes. Finally, regarding the fourth cluster, a holistic view of digital transformation has been encapsulated in *DigiGov Ledger Insights* focusing on the intersection of digitalization and governance. The fusion of digitalization with governance is represented by *DigiGov* highlighting how governance practices are integrated and evolve in the context of digitalization. *Ledger Insights* on the other hand, refers to the analysis and perspectives provided by distributed ledger technology, emphasizing its central role in digitalization strategies, particularly concerning security and transparency. This name reflects an approach that extends beyond the mere adoption of advanced technologies like distributed ledgers, encompassing a deep understanding and management of these processes, supported by research and literature review. Thus, *DigiGov Ledger Insights* symbolizes a comprehensive and academically grounded approach to digital transformation, considering both the technological implementation and the governance structure.

4.1 *CryptoLedger accounting network*

This first cluster is the most relevant in terms of the number of articles found, accounting for 60% of the sample analyzed. Interest in this topic has grown notably in recent years, with terms such as cryptocurrencies or crypto assets gaining notable prominence. As a result, the literature contains numerous papers focusing on how blockchain technology and cryptocurrencies can have a significant impact on the field of accounting and finance (Murray, 2022), highlighting the various advantages that can be derived from their application, as well as the potential risks that need to be taken into account. This growing interest on the part of researchers and practitioners around the world is supported by numerous studies, such as those conducted by Nakamoto (2008), Liu and Kean (2019), Jiao et al. (2019) or Fraga-Lamas and Fernández-Caramés (2019), among others. Along these lines, authors such as Robb et al. (2021) seek to distance this technology from the anti-social and anti-human image that is held of it, arguing that the blockchain can be used by humans for their benefit.

As for blockchain technology, its emergence has brought about a real revolution in various sectors (Hughes et al., 2019; Xie et al., 2019) such as the medical sector, where authors such as Dagher et al. (2018) and Al-Omar et al. (2019) highlight that the application

of this novel technology is a useful tool for the efficient management of healthcare data. However, the present work focuses on the field of accounting and auditing, where blockchain technology is positioned as a tool immersed in a new capitalist logic (Preda *et al.*, 2023), which could enable the execution of agreements and transactions without the need for an intermediary (Wang *et al.*, 2019). Beck *et al.* (2018) highlight the potential of blockchain technology, which could give rise to a new economic system. Numerous papers can thus be found in the scientific literature covering this research topic, where the issue of cryptocurrencies in the accounting field has gained increasing attention in recent years (Reyna *et al.*, 2018; O'Leary, 2018; Schmitz and Leoni, 2019; Lu *et al.*, 2020). Based on the above, Garanina *et al.* (2022) highlight that this technology begins to envision a paradigm shift within this field, where the role of the accountant is expected to be significantly altered. These authors, in line with de Andrade Simões *et al.* (2021), state that this profession will not disappear, but that it will have to adapt and move toward tasks more related to the supervision and verification of operations. In addition, Fischer (2018) highlights the importance of addressing ethical aspects when applying this technology in the accounting field.

The advantages offered by blockchain have been extensively analyzed by authors such as Kokina *et al.* (2017), Cong and He (2019), Demirkan *et al.* (2020) and Pope and Black (2023), among others. Although the application of this technology in the field of accounting and auditing is developed in more detail in Cluster 3, it is relevant to highlight in this cluster authors such as Kshetri (2018) and Chowdhury *et al.* (2023), who introduce the adoption of blockchain-based policies as a useful way to promote sustainable development and foster potential social impact, or authors such as Desplebin *et al.* (2021), Abu Afifa *et al.* (2023), Zayed and Othman (2023) or Fang *et al.* (2023), who highlight the improvement of accounting information as one of the key benefits following the application of blockchain in the accounting profession. In addition, Kwilinski (2019), Güdelci (2022) and Yu (2023), among others, emphasize the speed of transactions and the improvement in the security of accounting records as fundamental advantages. Pascual Pedreño *et al.* (2021) highlight the substantial technical improvements that can arise as a result of applying this technology in areas such as smart contracts (Khelifi *et al.*, 2023), initial coin offering (ICOs) (Boulianne and Fortin, 2020) and Internet of Things (IoT) (Pan *et al.*, 2019; Mistry *et al.*, 2020; de Vos *et al.*, 2021).

However, blockchain technology is not only limited to offering specific advantages within sectors such as accounting and auditing but has enabled the creation of a new industry: cryptocurrencies (Stein Smith, 2018). The phenomenon of cryptocurrencies was initially studied by authors such as Möser *et al.* (2013), presenting the potential challenges that could arise. Among the different crypto assets that can be found in the market, as can be Ethereum or CreditCoin (Li *et al.*, 2018; Herasymenko and Bachynska, 2021), Bitcoin is presented as the most relevant cryptocurrency, as in the words of Tschorsch and Scheuermann (2016) it is a crypto asset that has generated billions of dollars, which has revolutionized the cryptocurrency sector and aroused the interest of the scientific community. This has led authors such as Holub and Johnson (2018) and Liu *et al.* (2019) to analyze this phenomenon which, according to Cai (2021), has emerged as a way of “democratizing trust” by carrying out transactions in the absence of a third party.

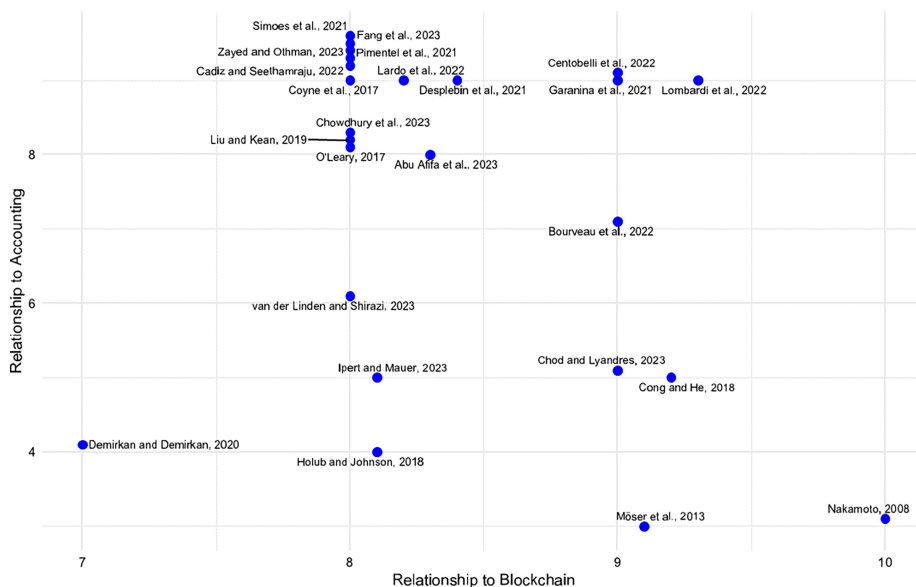
In this context, Dyball and Seethamraju (2022), state that some accounting firms have considered using cryptocurrencies to carry out various transactions with their clients. This interest in applying this type of crypto assets has aroused the concern of the scientific community and accounting professionals, which has led authors such as; Tudoran *et al.* (2022), Spanò *et al.* (2022) or Van der Linden and Shirazi (2023) to highlight the importance of adapting the different accounting standards to this new sector due to its potential and accelerated growth, with special emphasis on International Financial Reporting Standards

(IFRS), as well as the need for accountants and auditors to be trained and prepared in this field, so that they can face potential challenges (McGhin *et al.*, 2019; Appelbaum and Nehmer, 2020). This concern is supported by studies such as Xia *et al.* (2017a, 2017b), who argue that, although crypto assets such as Bitcoin emerged as an alternative to the traditional financial system, they could present a number of problems due to the number of transactions per second. Along these lines, Dearden and Tucker (2023) highlight the major challenges presented by crypto assets, such as illegal transactions of cryptocurrencies via the darknet. Coyne and McMickle (2017) and Pimentel *et al.* (2021) highlight the problems that can arise in accounting, especially in terms of valuation and difficulty of application, which has led authors such as Fuller and Markelevich (2020) to be critical and cautious about this emerging sector. Given the above, it is not surprising that this uncertainty has led many researchers to highlight the need for further research on the subject with the aim of achieving greater consensus in the scientific community (Conti *et al.*, 2018; Li *et al.*, 2020; Lardo *et al.*, 2022; Lombardi *et al.*, 2022).

Figure 6 shows the relationship between blockchain and accounting in the articles in this cluster. There is a high concentration of studies in the area where both relationships are high, indicating a strong link between these two areas in the literature. References such as Nakamoto (2008), located on the far right with the highest relationship with blockchain but lower linkage with accounting, and a dense group of studies in the region of (8,9) stand out, suggesting a convergence in research addressing both topics.

4.2 TransparentChain trust framework

It is essential to note the relevance of this cluster, as the emphasis on the importance of transparency and trust in the supply chain and traceability characterizes it. The generation of



Source(s): Authors' own creation

Figure 6. Relationship of cluster papers with blockchain and accounting

trust through accountability and the use of smart contracts is proposed and underscored, and the significance of traceability in maintaining the integrity and reliability of processes is emphasized, both of which are fundamental accounting principles. Furthermore, scientific advancement has highlighted the essential role of smart contracts in implementing these principles in a digital and automated context.

As introduced, the current state of the supply chain is of principal concern, where a series of exhaustive studies examine the impact and application of blockchain technology in the supply chain from various perspectives. The prospective effect of blockchain on future supply chain practices and policies is analyzed by [Wang et al. \(2019\)](#), highlighting trust as a critical driver of its adoption and acknowledging challenges and opportunities for future research. [Wamba and Queiroz \(2020\)](#) provide a comprehensive exploration of the role of blockchain in operations and supply chain management, suggesting the need to investigate synergies with AI and its role in global food supply chain traceability. The challenges of blockchain adoption in the supply chain at the individual level are addressed by [Queiroz and Fosso Wamba \(2019\)](#), who highlight the influence of facilitating conditions and social impact in India and the USA. [Kamble et al. \(2019\)](#) identify 13 factors enabling blockchain adoption in the agricultural supply chain, with traceability being the most significant. Using a systematic literature search methodology, [Dutta et al. \(2020\)](#) examine blockchain's applications, challenges and research opportunities in supply chain operations across various industrial sectors. [Pournader et al. \(2020\)](#) systematically review blockchain applications in supply chains, logistics and transport management. Finally, [Hastig and Sodhi \(2020\)](#) guide research on implementing traceability systems in the supply chain, emphasizing business requirements and critical success factors for implementing blockchain-based traceability systems. These studies together provide a comprehensive model for empirical work and a foundation for research on blockchain applications for supply chain traceability.

When discussing transparency strictly, the importance of establishing documentation and traceability standards in blockchain-based systems is agreed upon, with different angles being addressed regarding accountability and privacy. It is posited by [Cornelius \(2021\)](#) that non-fungible token (NFTs) should be evaluated for transparency and accountability within blockchain records from the perspectives of users, firms and regulators, with improvements such as personal data storage and regulatory frameworks aligned with general data protection regulation (GDPR) and California consumer privacy act (CCPA) being proposed. [Lin et al. \(2019\)](#) have developed a prototype system for food safety traceability using blockchain and EPCIS, tackling data invisibility, tampering and sensitive information disclosure issues with a management architecture for data inside and outside the chain in IoT applications. [Zhao et al. \(2023\)](#) offer a traceable one-time address solution for digital museum assets in blockchain systems, providing anonymity for receivers and traceability for system supervisors, addressing privacy challenges and data sharing in large exhibitions. These studies emphasize the need for a robust and transparent infrastructure in implementing blockchain to ensure privacy and traceability across various sectors.

At this point, it is imperative to underscore the progress in the direct derivatives of transparency provided by blockchain systems, with sustainability being a clear case where the need to overcome barriers to the adoption of blockchain technology in sustainable supply chain management and its ability to combat greenwashing in sustainable finance is implicated. [Christodoulou et al. \(2023\)](#) have addressed that monitoring EU Green Bonds through EUGBS-Chain, a publicly accessible blockchain-based framework, can reduce monitoring costs and enhance market transparency and credibility. [Saber et al. \(2019\)](#) have examined how blockchain can support the sustainability of the supply chain, identifying adoption barriers that include interorganizational, intraorganizational, technical and external

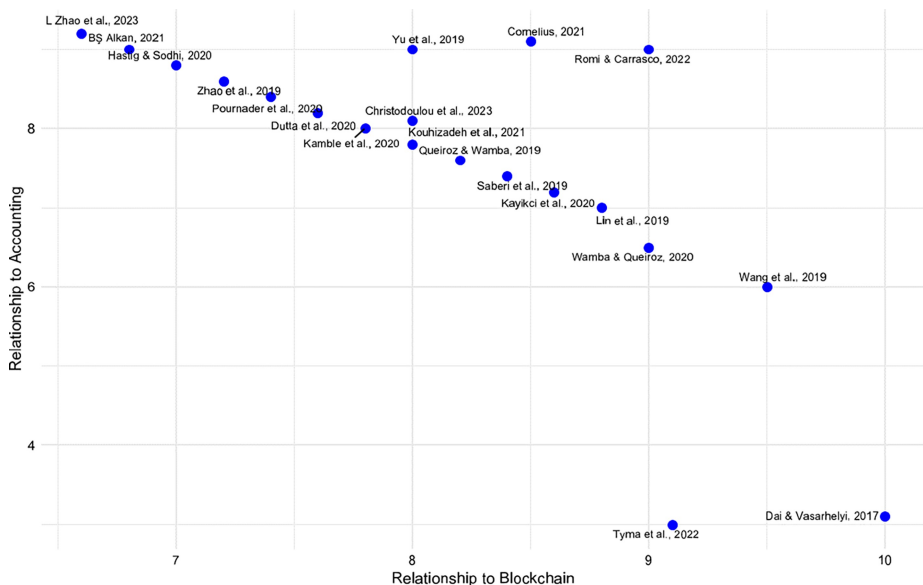
aspects and highlighting the importance of environmental and social dimensions of sustainability. Furthermore, [Kouhizadeh et al. \(2021\)](#) have used the DEMATEL methodology to analyze these barriers and have proposed future research linking organizational, technological and external concepts for blockchain adoption, emphasizing the necessity of longitudinal studies to understand the evolution of these barriers and the impact of blockchain on efficiency, transparency and traceability in sustainable supply chains; the importance of blockchain technology in accounting is underscored, providing a detailed analysis of its application in accounting information systems and its role in enhancing accountability. It is recognized by [Yu et al. \(2018\)](#) that blockchain can improve the transparency, traceability, timeliness and tamper-proof nature of financial information while also acknowledging that existing limitations may delay the realization of these benefits. [Tyma et al. \(2022\)](#) examine how accountability is constructed in different types of blockchain systems and find that accountability tends to increase with less pure applications of the technology, challenging previous assumptions and highlighting the importance of enhanced accountability in blockchain systems, especially when the foundational assumptions of public blockchains are adapted and implemented in the context of private and consortium blockchains. [Şeyma Alkan et al. \(2021\)](#) propose a real-time blockchain accounting system as a new paradigm that can improve the quality, timeliness, comparability and verifiability of information, increasing auditability and facilitating document verification and remote real-time inventory review. Together, these works emphasize the transformative potential of blockchain for accounting and financial management and the sustainability of business operations ([Pires et al., 2024](#)).

In the context of modernization and democratization, the incorporation of blockchain technology cannot be overlooked. The research conducted by [Carrasco and Romi \(2022\)](#) investigates how blockchain technology can support vulnerable populations and democratize contested markets. Implementing blockchain-based accounting information systems could foster inclusive development and generate trust, thereby contributing to the support of economic and social systems. Furthermore, [Kayikci et al. \(2020\)](#) identify opportunities and impediments to the implementation of blockchain technology in the food supply chain within the Industry 4.0 era, emphasizing the need to consider the perspectives of people, processes, performance and technology to overcome challenges and harness the potential benefits of this technology. In addition, [Zhao et al. \(2019\)](#) conducted a systematic literature analysis to review the current state of blockchain technology in agri-food value chain management, highlighting six implementation challenges, including storage capacity, scalability, privacy leakage, high costs and regulation, and skill shortages. Collectively, these studies underline the transformative capacity of blockchain to improve food safety, quality and traceability while advocating for blockchain-based accounting and assurance that could provide real-time, verifiable information disclosure and increasingly automated assurance, as proposed by [Dai and Vasarhelyi \(2017\)](#).

Figure 7 presents a scatter plot illustrating the relationship between blockchain and accounting articles in this cluster. A strong concentration of studies is observed in the area where both ratios are high, especially in the range of 8–9 on both axes, suggesting a significant interest in the intersection of these two fields.

4.3 IntelliLedger accounting tech

The topic discussed in this cluster is of relevance, symbolizing a paradigm shift in the performance of different accounting tasks. The integration of emerging technologies such as AI and blockchain in traditional accounting allows marking a transition toward the modernization and innovation of accounting and auditing practices, which will provide great



Source(s): Authors' own creation
Figure 7. Relationship of cluster papers with blockchain and accounting

advantages such as the optimization of accounting processes, the collection and analysis of large volumes of data or the automation of repetitive tasks that allow accounting professionals to develop other types of analysis and thus favor decision making, among others. In this context, the incipient interest in new technologies, especially in recent years, has led academics to conduct research in this field of knowledge. In this regard, numerous articles can be found in the literature discussing the impact of blockchain and new technologies in the field of accounting and auditing, highlighting the importance of their application for accountants and auditors (Juma'h and Li, 2023).

Although some authors such as Zhang et al. (2021) or Maffei et al. (2021) are more critical of the application of blockchain in accounting, most researchers highlight the various benefits that this technology brings to the accounting field, which makes it necessary for accountants to be specialized and adaptable when it comes to adapting to the dizzying technological changes that have been taking place in the last decade, enabling them to face the numerous challenges and opportunities arising from these advances in the accounting profession (Qasim and Kharbat, 2020; Moll and Yigitbasioglu, 2019; Tiron-Tudor et al., 2021; Sabuncu, 2022).

In this line, surveys conducted by Liu et al. (2023) or Gai et al. (2022) highlight the importance of applying blockchain-based technologies and the multiple advantages from which instructors, managers and researchers involved in accounting informatization can benefit. Accordingly, Treiblmaier (2018) highlights the need to foster academic research in this area, which would facilitate the understanding of the potential impact of blockchain within companies applying this technology. Authors such as Wang and Kogan (2018) highlight the potential impact of blockchain in its application in various accounting tasks, ensuring a higher degree of privacy and confidentiality in transactions, as well as continuous

monitoring and fraud prevention (Grosu *et al.*, 2022). In line with these authors, Kolisnyk *et al.* (2023) and Mosteanu and Faccia (2020) highlight the reduction of accounting errors as one of the most noteworthy advantages, as well as the savings in cost and time that implementing these technologies would entail by dispensing with manual labor.

On the other hand, Wang (2023) states the importance of blockchain technology in quality control in the processes carried out during an audit, which can lead to a 20% improvement and which, according to Abdennadher *et al.* (2022), would improve traditional auditing by providing a decentralized, low-cost and automated system. In relation to the latter, Lada and Martinek-Jaguszewska (2023) define the automation of accounting processes as an organizational phenomenon that is directly linked to the systematic repetition of accounting procedures. These authors stress the need to develop research and models that help to understand this concept to prepare the accounting professionals of the coming years. Along these lines, Shapovalova *et al.* (2023) recommend the integration of various tools that promote the modernization of accounting policies (Ucieda Blanco *et al.*, 2025), including the Blockchain, Big Data, AI and the IoT. Regarding the latter tool, Banerjee *et al.* (2018) argue that blockchain technology facilitates the secure exchange of data sets, so sharing IoT data among researchers and practitioners could bring several benefits.

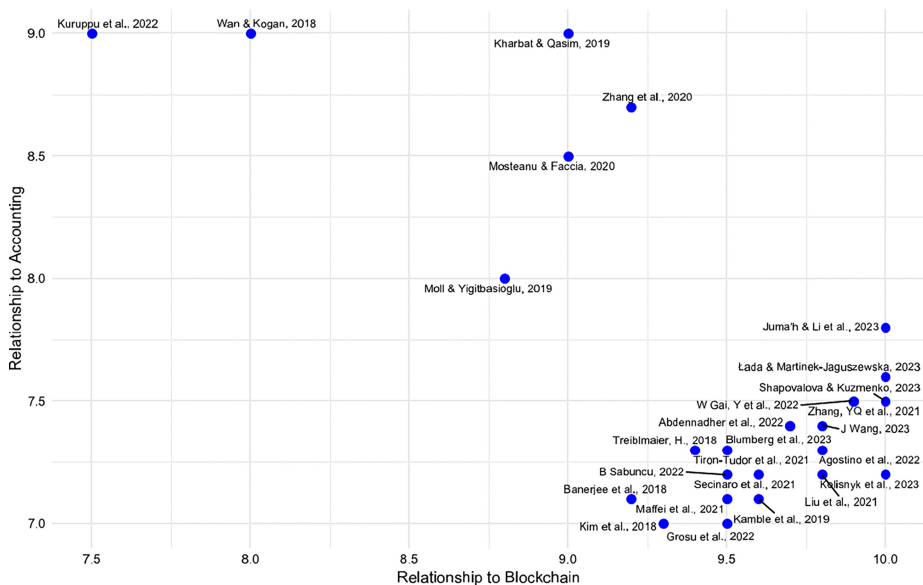
These benefits are not only limited to private companies. Authors such as Kuruppu *et al.* (2022) highlight the importance of applying blockchain and triple-entry technology to improve the accounting practices of non-governmental organizations, stating that these applications can improve efficiency and accuracy in recording and reporting, which would significantly improve the organization's accountability to other partner organizations and beneficiaries. On the other hand, Agostino *et al.* (2022) stress the practical implications of applying digital strategies in the public sector, emphasizing the importance of adopting digital tools to achieve more open and transparent communication in accounting information. In this way, these authors present digital transformation as a highly relevant process in accounting and auditing, involving extensive technological, ethical and contextual considerations. Furthermore, these benefits are not only focused on financial or management aspects, but can also be beneficial for the environment, by facilitating the recording of carbon emissions, thus achieving greater control and an opportunity to reduce these emissions and comply with international agreements (Blumberg and Sibilla, 2023). Along these lines, Secinaro *et al.* (2021) highlight the need to pay more attention to the environment and ensure sustainability in blockchain-based business models in accounting and auditing.

Figure 8 shows the relationship between blockchain and accounting in various literature references in the cluster. There is a noticeable concentration of studies in the bottom right of the graph, indicating a high relationship with blockchain but a lower relationship with Accounting.

4.4 DigiGov ledger insights

The adoption and integration of new technologies in different accounting and auditing tasks offer numerous advantages that are highly relevant in today's dynamic context of continuous change. In this context, this cluster addresses how the processes of digitalization and integration of new technologies have become part of the strategic decisions of corporate governance bodies, recognizing their significant advantages in the performance of accounting tasks, in addition to other areas of great relevance within organizations.

In this sense, there is an extensive literature that addresses the evolution and integration of blockchain technology in the field of accounting and auditing. This can be seen in works such as those of Pimentel and Boulianne (2020), whose research emphasizes the importance of integrating new technologies, making evident the need for progress in their research by



Source(s): Authors’ own creation
Figure 8. Relationship of cluster papers with blockchain and accounting

corporate governance teams. To achieve optimal integration, [Centobelli et al. \(2022\)](#) highlight the importance of having a technological infrastructure with greater control through permissions and validation, as well as the integration of business and security applications.

In this line, [Souri et al. \(2023\)](#) address financial data security, audit quality and smart grid communication as innovative aspects that can be significantly leveraged through the application of blockchain-based technologies, thus addressing the challenges of the IoT. Furthermore, the digitization of accounting and auditing processes has come to the fore, positioning itself as a crucial aspect for corporate governance as, according to these authors, the adoption of blockchain-based technologies brings efficiency, trust and transparency, as well as enriching accounting through the transition to a triple-entry accounting system. [Cagle \(2020\)](#), while noting the growing international popularity of blockchain technology in auditing, highlights that the speed of this technology means that a gap between research and the real world needs to be bridged, as to promote further improvements in the digitization of tasks in areas such as accounting and auditing, research needs to develop in parallel with technological change.

However, digitization has not only been of great interest to corporate governance in the field of accounting, as the various advantages of these new technologies have been investigated by different authors in different corporate areas. Thus, authors such as [Alghamdi and Agag \(2024\)](#) show how organizations could take advantage of digitalization when developing different data-centric innovation strategies, which are crucial for success in a rapidly changing business environment. In this way, organizations in the early stages of adopting big data, as well as those with a long track record, can take advantage of these processes to identify potential strategic gaps in developing innovation strategies,

offering managers and policy makers in different sectors the opportunity to formulate highly effective strategies. An example of this can be found within the energy sector, where [Esmat et al. \(2021\)](#) developed a decentralized 2P2 platform, called DeTrade, integrating the blockchain to facilitate different processes such as the implementation of smart contracts, the reduction of intermediary transaction costs and the development of trust among consumers. On the other hand, [Khudayar Suyunovich and Javlonbek Shakhriyorovich \(2022\)](#) underline the importance of digitalization in the industrial sector, pointing out that management oversight through innovative methods and technologies is of great importance to ensure information security and facilitate top management's access to digital technologies. In this way, these authors position digital transformation as a crucial element of growth and development for industry.

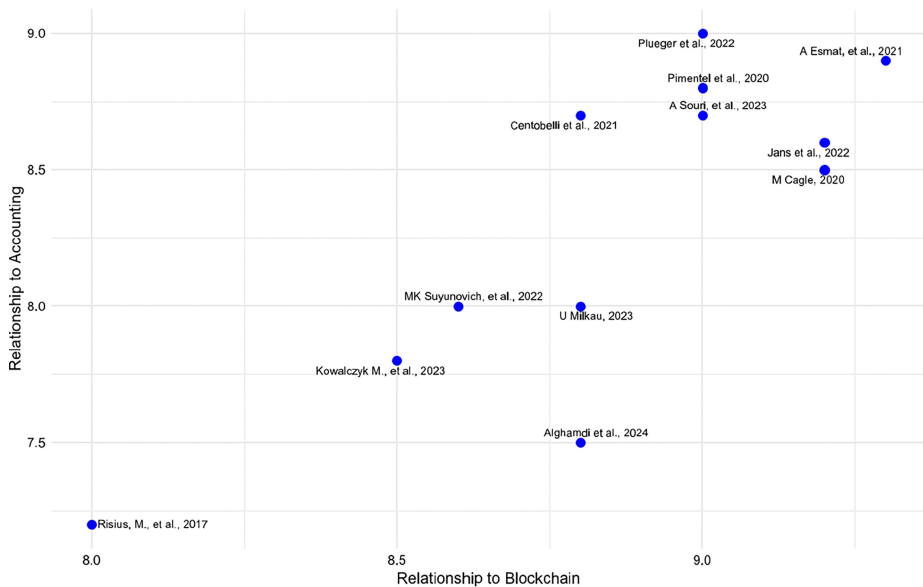
The various advantages offered by digitalization in decision-making and accounting can be extrapolated to local governments. Authors such as [Kowalczyk and Napiecek \(2023\)](#) claim that the implementation of e-government at the local level has potential advantages in achieving management objectives. However, the positive perception of the application of new technologies in these processes is at a stage of controversy, generating debates and cautious considerations. In this sense, despite highlighting the benefits, these authors are cautious, as the implementation of technologies such as blockchain in local governments is still at an underdeveloped stage, which makes it difficult to make an accurate assessment. In this context of uncertainty, several studies can be found that are critical of digitization and its integration into decision-making by corporate governance. For this reason, authors such as [Pflueger et al. \(2022\)](#) advise considering the different challenges posed by the digitalization of accounting and auditing processes for governing bodies, highlighting that the integration of this type of technology can lead to uncontrollable economic policies, which would lead to a changing and complex economic organization, making a critical evaluation of this type of application necessary.

In line with this work, [Risius and Spohrer \(2017\)](#) are critical of blockchain technology, claiming that the design approach and its characteristics have neglected its practical applications, which limits value creation. Therefore, these authors call for further research, emphasizing the need to collaborate from a multidisciplinary perspective and provide a holistic view of this technology that focuses on its application, value creation and governance. In addition, [Milkau \(2023\)](#) focuses on the analysis of risks associated with digital assets, especially blockchain-based tokens such as securities and utility tokens. He stresses the need to monitor the development of these assets, as they can have a significant impact on the financial system, which calls for a comprehensive assessment of risks associated with aspects such as smart contracts, as well as highlighting the instability of digital assets, as they depend more on institutional arrangements than on novel technologies.

[Figure 9](#) presents the relationship between Blockchain and Accounting in various literature references in the cluster. There is a significant concentration of studies in the upper-middle area of both axes, suggesting that a large part of the literature explores the intersection of these two fields with a balanced approach. Some studies present a strong linkage with both fields, while others tend to emphasize more one of the two, reflecting different perspectives and applications. In addition, references can be identified that are less related to accounting, which could indicate more technical or generalist approaches to Blockchain.

5. Discussion

The findings derived from the analysis developed in this study contribute to the understanding of how emerging technologies such as blockchain or AI are transforming and redefining accounting practices. The four clusters identified in the previous section provide



Source(s): Authors’ own creation
Figure 9. Relationship of cluster papers with blockchain and accounting

an analytical framework to examine the relationship between technological innovation and accounting, as well as supply chains and governance.

First, the *CryptoLedger Accounting Network* cluster reflects the growing impact of blockchain technology and cryptocurrencies on accounting and finance. On the one hand, authors such as Wang *et al.* (2019) and Garanina *et al.* (2021) highlight blockchain technology as a crucial element that has brought about a paradigm shift in the role of accounting professionals in tasks such as supervision or verification, as well as being a key aspect in eliminating intermediaries. On the other hand, although the emergence of cryptocurrencies such as Bitcoin has generated a great deal of interest (Liu *et al.*, 2019), this cluster also addresses the various ethical, legal and accounting valuation issues that may arise (Fischer, 2018; Tudoran *et al.*, 2022).

Second, the *TransparentChain Trust Framework* cluster addresses the importance of transparency, trust and traceability in supply chains through blockchain technology. In this line, Yu *et al.* (2019) argue that this technology improves both transparency and security of financial information, while Saberi *et al.* (2019) and Christodoulou *et al.* (2023) highlight that blockchain combats fraudulent practices and aspects such as greenwashing, which improves the transparency of organisations implementing this type of technology.

Moreover, the *IntelliLedger Accounting Tech* cluster highlights the importance of blockchain technology in modernizing and transforming accounting and auditing, optimizing processes, reducing errors, automating repetitive tasks and enabling accounting professionals to focus on tasks that require more analysis (Grosu *et al.*, 2022; Kolisnyk *et al.*, 2023; Wang, 2023).

Finally, the innovative and beneficial nature of blockchain technology is addressed in the *DigiGov Ledger Insights* cluster, highlighting that the application and benefits derived from

this technology are not limited to private companies, but can also be extended to various sectors such as energy, industry and local governments (Khudayar Suyunovich and Javlonbek Shakhriyovich, 2022; Kowalczyk and Napiecek, 2023).

However, it should be noted that the adoption of blockchain technology in accounting may face several important challenges. First, the transition to a new paradigm may be held back by resistance to change on the part of some accounting professionals. This, coupled with the lack of technological infrastructure in many firms, can significantly delay the development and implementation of these technologies. Moreover, the lack of a solid regulatory basis and uncertainty about compliance with existing regulations, coupled with the economic risks associated with the volatility of digital assets, also pose a challenge to be taken into consideration when implementing these technologies.

In this context, new opportunities arise to advance in this field of knowledge, suggesting new lines of research that can clarify the uncertainty that arises toward these challenges and which are developed in the following section, including the in-depth study of the impact of the blockchain on sustainable development, the improvement of security and efficiency in accounting records, or an exhaustive analysis of the impact of automation on the accounting profession, among others. These new lines of research represent a step forward in this field of knowledge, providing new ideas on the future of accounting and business organization systems.

6. Conclusion

This study provides a comprehensive review of the disruptive potential of blockchain technology in the field of accounting. Through a systematic literature review and the use of bibliometric analysis techniques, four main clusters have been identified as key to analyze the multifaceted impact of blockchain on accounting practices: CryptoLedger Accounting Network, TransparentChain Trust Framework, IntelliLedger Accounting Tech and DigiGov Ledger Insights.

Each of these clusters represents a unique dimension of the interaction between blockchain and accounting, from merging traditional accounting methodologies with blockchain technology to improving transparency and trust in supply chains. Furthermore, the integration of AI with blockchain in accounting systems is explored, as well as the implications for governance and digital transformation. In this sense, this article is of great relevance to understand the current state of the art of this field of study, contributing positively to the scientific literature from a theoretical point of view, as well as contributing with several practical implications that can significantly help companies to apply this type of technologies in their accounting practices.

6.1 Contributions to theory

This study contributes significantly to the theoretical development at the intersection of blockchain and accounting. First, by identifying and analyzing the four key clusters, the study extends the existing theoretical framework, providing a deeper understanding of how blockchain can integrate and transform accounting practices. This detailed analysis helps to envision the many ways in which blockchain technology can influence accounting, from automating processes to improving data security.

In addition, research on merging blockchain with traditional accounting methodologies presents innovations in accounting techniques and practices. This opens up new avenues for research and development in the accounting field, suggesting that accounting methodologies can evolve significantly by incorporating cutting-edge technology. The exploration of the TransparentChain Trust Framework, on the other hand, provides a new perspective on how

blockchain can be used to improve transparency and trust in supply chains, which has direct implications for accounting theory and supply chain management.

6.2 Managerial implications

The practical implications of this study are varied and relevant for accounting and finance professionals. First, the implementation of technologies such as *CryptoLedger* in the accounting field offers the possibility of automating and improving the accuracy of economic-financial transactions. This would result in the minimization of human errors and greater efficiency in accounting records, as well as facilitating the accessibility and management of data in real time, which is very useful for global companies that require constant updating of their financial reports.

On the other hand, the practical implications of the *TransparentChain Trust Framework* cluster have a significant impact on both transaction transparency and supply chains. Thus, by integrating smart contracts, companies can automate agreements between parties, which, in addition to streamlining processes, ensures that all parties comply with pre-established conditions without the need for intermediaries, resulting in greater operational efficiency and reduced transaction costs.

The *IntelliLedger Accounting Tech* cluster, which represents a shift in the way financial data is managed and audited, has several implications for accounting and auditing professionals. The application of AI would allow these professionals to focus on non-automatable tasks with higher added value, such as strategic planning, among others. In this way, AI would be able to process large volumes of data and detect patterns or irregularities that would be more difficult to detect if done by a human.

Finally, the *DigiGov Ledger Insights* cluster provides relevant information for the development and implementation of regulatory frameworks and government policies that will benefit from the implementation of blockchain technology, offering an alternative way of processing public data and managing funds. In this way, the potential for fraud or corruption could be reduced, as well as underlining the need for regulatory frameworks that are geared toward the use of these technologies in an ethical and secure manner.

6.3 Research limitations and future lines of research

Despite providing a comprehensive review of the current state of the art of the potential of blockchain technology in accounting, this study has several limitations that need to be considered. First, the selection of three databases (Web of Science, Scopus and EBSCO) presents a limitation in that, by not covering all possible databases, there is a possibility that some studies that may be of particular relevance have been left out. Second, the rapidly evolving nature of blockchain technology may make some of the study's conclusions less relevant or accurate in the near future. In this context, the dynamic and changing nature of this field of study requires constant updates and revisions, which underlines the need to remain attentive to future work. On the other hand, the classification of topics and research into different clusters can be subjective, and the boundaries between different groups can be blurred, which creates the risk of generating categories that do not adequately reflect the interconnectedness of the phenomena studied, partly due to the cross-cutting nature of some concepts. Moreover, the focus on four specific clusters may exclude other relevant areas which could lead to a partial view of the whole picture, as well as to the omission of other relevant innovations and/or applications.

However, despite these limitations, literature reviews and bibliometric analyses are particularly useful tools for identifying future lines of research. By synthesizing and analyzing large volumes of bibliographic data, these methodologies allow for an exhaustive

evaluation of existing scientific production, glimpsing trends, gaps in knowledge and areas of opportunity that can guide the development of new work. In this sense, and following Centobelli *et al.* (2020) and Lopez Pérez *et al.* (2023), possible future lines of research are presented that are in line with the four clusters identified in this work and are summarized in Table 1.

In relation to the CryptoLedger Accounting Network cluster, the adaptation of accounting standards such as IFRs to the context of cryptocurrencies and other cryptoassets is particularly relevant in the current context, thus addressing complex challenges such as their valuation and application. On the other hand, the advantages of blockchain have to be analyzed in depth, being the security and efficiency of accounting records one of the most remarkable, so the study of the impact of blockchain technology on the daily accounting practice related to these aspects is a topic of special interest to be analyzed. Finally, the study of the impact of blockchain technology on sustainable development, as well as the study of the ethical aspects associated with the implementation of this technology in the accounting field, are topics that may be very interesting to analyze in future works, as it is important to study in depth how blockchain can be used in a responsible and beneficial way for society.

The TransparentChain Trust Framework cluster shows a wide range of opportunities for future work that may prove very interesting. These research opportunities include the optimization of smart contracts in supply chains, including the exploration of best practices for the adoption and effective use of smart contracts to ensure the integrity and reliability of processes. In addition, and following Wamba and Queiroz (2020), the study of synergies between blockchain and emerging technologies such as AI is an important line of research by looking at how these technologies can work together for the analysis of large volumes of data and the identification of patterns and anomalies that may indicate quality or security issues. Furthermore, it is of particular interest to investigate how blockchain can be used to record and verify transactions to reduce opportunities for corruption and enhance the veracity of sustainability claims.

As for the IntelliLedger Accounting Tech cluster, a crucial line of research in modern accounting is optimizing the integration of blockchain and AI. This study would focus on how to combine these technologies to refine accounting processes, improving data accuracy and automating repetitive tasks, which can significantly transform decision-making efficiency. In addition, it is essential to investigate the impact of automation on the accounting profession, analyzing how automation redefines the roles and skills required of accountants, and how educational institutions must adapt to prepare future professionals. Finally, the development of automated audit models with blockchain represents a promising line, which seeks to design audit systems using blockchain to provide continuous monitoring, reducing the risk of fraud and improving the quality of audits, offering a more efficient and reliable approach to financial oversight.

Finally, in relation to the DigiGov Ledger Insight cluster, future lines of research could focus on strengthening the security of financial data in interconnected IoT environments by integrating blockchain, exploring how this technology can mitigate vulnerabilities and increase trust in data management. Another key area is the development of governance models for the effective implementation of blockchain in local governments, overcoming technological and bureaucratic obstacles to secure adoption. Furthermore, it is crucial to assess how blockchain can optimize data-driven innovation strategies, seeking to improve efficiency and reduce costs in various industries. Finally, there is a need to thoroughly investigate the risks associated with digital assets and smart contracts, formulating mitigation strategies that ensure effective integration into the financial system and manage the inherent instability of these assets.

Table 1. Future lines of research by clusters

Cluster	Exemplary references	Future lines of research
CryptoLedger accounting network	Preda et al. (2023) Abu Afifa et al. (2023) Garanina et al. (2022)	• Adaptation of accounting standards to cryptocurrencies and other cryptoassets • Improving the security and efficiency of accounting records • Impact of blockchain on sustainable development • Ethics and blockchain technology in accounting
TransparentChain trust framework	Christodoulou et al. (2023) Zhao et al. (2023) Tyma et al. (2022)	• Optimizing the implementation of smart contracts in supply chains • Synergies between blockchain and emerging technologies • Blockchain vs corruption and greenwashing
IntelliLedger accounting tech	Wang (2023) Kuruppu et al. (2022) Qasim and Kharbat (2020)	• Blockchain and artificial intelligence in the accounting field • Impact of automation on the accounting profession • Benefits and limitations of automation models in auditing
DigiGov ledger insights	Souri et al. (2023) Alghamdi and Agag (2023) Centobelli et al. (2022)	• Integration of blockchain in the security of financial data in IoT environments • Development of governance models for blockchain implementation in local governments • Efficiency of blockchain in innovation strategies • Risks and mitigation strategies for digital assets and smart contracts
Source(s): Authors' own creation		

References

- Abdennadher, S., Grassa, R., Abdulla, H. and Alfalasi, A. (2022), "The effects of blockchain technology on the accounting and assurance profession in the UAE: an exploratory study", *Journal of Financial Reporting and Accounting*, Vol. 20 No. 1, pp. 53-71, doi: [10.1108/JFRA-05-2020-0151](https://doi.org/10.1108/JFRA-05-2020-0151).
- Abu Afifa, M.M., Vo Van, H. and Le Hoang Van, T. (2023), "Blockchain adoption in accounting by an extended UTAUT model: empirical evidence from an emerging economy", *Journal of Financial Reporting and Accounting*, Vol. 21 No. 1, pp. 5-44, doi: [10.1108/JFRA-12-2021-0434](https://doi.org/10.1108/JFRA-12-2021-0434).
- Agostino, D., Bracci, E. and Steccolini, I. (2022), "Accounting and accountability for the digital transformation of public services", *Financial Accountability and Management*, Vol. 38 No. 2, pp. 145-151, doi: [10.1111/faam.12314](https://doi.org/10.1111/faam.12314).
- Alghamdi, O. and Agag, G. (2024), "Competitive advantage: a longitudinal analysis of the roles of data-driven innovation capabilities, marketing agility, and market turbulence", *Journal of Retailing and Consumer Services*, Vol. 76, p. 103547, doi: [10.1016/j.jretconser.2023.103547](https://doi.org/10.1016/j.jretconser.2023.103547).
- Al-Okaily, M. (2024), "Attitudes toward the adoption of accounting analytics technology in the digital transformation landscape", *Journal of Accounting and Organizational Change*, ahead-of-print, doi: [10.1108/JAOC-04-2024-0127](https://doi.org/10.1108/JAOC-04-2024-0127).
- Ante, L. (2021), "Smart contracts on the blockchain- a bibliometric analysis and review", *Telematics and Informatics*, Vol. 57, p. 101519.
- Appelbaum, D. and Nehmer, R.A. (2020), "Auditing cloud-based blockchain accounting systems", *Journal of Information Systems*, Vol. 34 No. 2, pp. 5-21, doi: [10.2308/isys-52660](https://doi.org/10.2308/isys-52660).
- Banerjee, M., Lee, J. and Choo, K.K.R. (2018), "A blockchain future for Internet of Things security: a position paper", *Digital Communications and Networks*, Vol. 4 No. 3, pp. 149-160, doi: [10.1016/j.dcan.2017.10.006](https://doi.org/10.1016/j.dcan.2017.10.006).
- Beck, R., Müller-Bloch, C. and King, J.L. (2018), "Governance in the blockchain economy: a framework and research agenda", *Journal of the Association for Information Systems*, Vol. 19 No. 10, p. 1.
- Bible, W., Raphael, J., Taylor, P. and Valiente, I.O. (2017), *Blockchain Technology and Its Potential Impact on the Audit and Assurance Profession*, CPA Canada, AICPA, pp. 1-28.
- Blumberg, G. and Sibilla, M. (2023), "A carbon accounting and trading platform for the UK construction industry", *Energies*, Vol. 16 No. 4, p. 1566, doi: [10.3390/en16041566](https://doi.org/10.3390/en16041566).
- Boulianne, E. and Fortin, M. (2020), "Risks and benefits of initial coin offerings: evidence from Impak Finance, a regulated ICO*", *Accounting Perspectives*, Vol. 19 No. 4, pp. 413-437, doi: [10.1111/1911-3838.12243](https://doi.org/10.1111/1911-3838.12243).
- Cagle, M. (2020), "A mapping analysis of blockchain applications within the field of auditing", *Muhasebe Bilim Dünyası Dergisi*, Vol. 22 No. 4, pp. 695-724, doi: [10.31460/mbdd.746809](https://doi.org/10.31460/mbdd.746809).
- Cai, C.W. (2021), "Triple-entry accounting with blockchain: how far have we come?", *Accounting and Finance*, Vol. 61 No. 1, pp. 71-93, doi: [10.1111/acfi.12556](https://doi.org/10.1111/acfi.12556).
- Campobasso, F. and Boscia, V. (2022), "Sustainability frontiers of strategic risk management and firm survival: the Altman score effectiveness: a bibliometric analysis", *Business Strategy and the Environment*, Vol. 32 No. 6, pp. 3783-3791, doi: [10.1002/bse.3336](https://doi.org/10.1002/bse.3336).
- Carrasco, H. and Romi, A.M. (2022), "Toward an omniopicon: the potential of blockchain technology toward influencing vulnerable populations in contested markets", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1685-1713, doi: [10.1108/AAAJ-08-2020-4732](https://doi.org/10.1108/AAAJ-08-2020-4732).
- Centobelli, P., Cerchione, R., Chiaroni, D., Del Vecchio, P. and Urbinati, A. (2020), "Designing business models in circular economy: a systematic literature review and research agenda", *Business Strategy and the Environment*, Vol. 29 No. 4, pp. 1734-1749, doi: [10.1002/bse.2466](https://doi.org/10.1002/bse.2466).
- Centobelli, P., Cerchione, R., Del Vecchio, P., Oropallo, E. and Secundo, G. (2022), "Blockchain technology design in accounting: game changer to tackle fraud or technological fairy tale?", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1566-1597, doi: [10.1108/AAAJ-10-2020-4994](https://doi.org/10.1108/AAAJ-10-2020-4994).

- Chowdhury, E.K., Khan, I.I. and Dhar, B.K. (2023), "Strategy for implementing blockchain technology in accounting: perspectives of stakeholders in a developing nation", *Business Strategy and Development*, Vol. 6 No. 3, pp. 477-490, doi: [10.1002/bsd2.256](https://doi.org/10.1002/bsd2.256).
- Christodoulou, P., Psillaki, M., Sklias, G. and Chatzichristofis, S.A. (2023), "A blockchain-based framework for effective monitoring of EU green bonds", *Finance Research Letters*, Vol. 58, p. 104397, doi: [10.1016/j.frl.2023.104397](https://doi.org/10.1016/j.frl.2023.104397).
- Cong, L.W. and He, Z. (2019), "Blockchain disruption and smart contracts", *The Review of Financial Studies*, Vol. 32 No. 5, pp. 1754-1797, doi: [10.1093/rfs/hhz007](https://doi.org/10.1093/rfs/hhz007).
- Conti, M., Sandeep, K.E., Lal, C. and Ruj, S. (2018), "A survey on security and privacy issues of Bitcoin", *IEEE Communications Surveys and Tutorials*, Vol. 20 No. 4, pp. 3416-3452, doi: [10.1109/COMST.2018.2842460](https://doi.org/10.1109/COMST.2018.2842460).
- Cornelius, K. (2021), "Betraying blockchain: accountability, transparency and document standards for non-fungible tokens (NFTs)", *Information (Information)*, Vol. 12 No. 9, p. 358, doi: [10.3390/info12090358](https://doi.org/10.3390/info12090358).
- Coyne, J.G. and McMickle, P.L. (2017), "Can blockchains serve an accounting purpose?", *Journal of Emerging Technologies in Accounting*, Vol. 14 No. 2, pp. 101-111, doi: [10.2308/jeta-51910](https://doi.org/10.2308/jeta-51910).
- Dagher, G.G., Mohler, J., Milojkovic, M. and Marella, P.B. (2018), "Ancile: privacy-preserving framework for access control and interoperability of electronic health records using blockchain technology", *Sustainable Cities and Society*, Vol. 39, pp. 283-297, doi: [10.1016/j.scs.2018.02.014](https://doi.org/10.1016/j.scs.2018.02.014).
- Dai, J. and Vasarhelyi, M.A. (2017), "Toward blockchain-based accounting and assurance", *Journal of Information Systems*, Vol. 31 No. 3, pp. 5-21, doi: [10.2308/isys-51804](https://doi.org/10.2308/isys-51804).
- de Andrade Simões, M.P., Cavalcanti, J.A., de Melo, J.F.M. and Reis, C.Q. (2021), "Benefits of using blockchain technology as an accounting auditing instrument", *Revista Ambiente Contábil-Universidade Federal do Rio Grande do Norte-ISSN 2176-9036*, Vol. 13 No. 1, doi: [10.21680/2176-9036.2021v13n1ID23626](https://doi.org/10.21680/2176-9036.2021v13n1ID23626).
- de Vos, M., Ileri, C.U. and Pouwelse, J. (2021), "XChange: a universal mechanism for asset exchange between permissioned blockchains", *World Wide Web*, Vol. 24 No. 5, pp. 1691-1728, doi: [10.1007/s11280-021-00870-x](https://doi.org/10.1007/s11280-021-00870-x).
- Dearden, T.E. and Tucker, S.E. (2023), "Follow the money: analyzing Darknet activity using cryptocurrency and the Bitcoin blockchain", *Journal of Contemporary Criminal Justice*, Vol. 39 No. 2, pp. 257-275, doi: [10.1177/10439862231157521](https://doi.org/10.1177/10439862231157521).
- Demirkan, S., Demirkan, I. and McKee, A. (2020), "Blockchain technology in the future of business cybersecurity and accounting", *Journal of Management Analytics*, Vol. 7 No. 2, pp. 189-208, doi: [10.1080/23270012.2020.1731721](https://doi.org/10.1080/23270012.2020.1731721).
- Denney, A.S. and Tewksbury, R. (2013), "How to write a literature review", *Journal of Criminal Justice Education*, Vol. 24 No. 2, pp. 218-234.
- Desplebin, O., Lux, G. and Petit, N. (2021), "To Be or not to be: blockchain and the future of accounting and auditing", *Accounting Perspectives*, Vol. 20 No. 4, pp. 743-769, doi: [10.1111/1911-3838.12265](https://doi.org/10.1111/1911-3838.12265).
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N. and Lim, W.M. (2021), "How to conduct a bibliometric analysis: an overview and guidelines", *Journal of Business Research*, Vol. 133, pp. 285-296.
- Dutta, P., Choi, T.M., Somani, S. and Butala, R. (2020), "Blockchain technology in supply chain operations: applications, challenges and research opportunities", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 142, p. 102067, doi: [10.1016/j.tre.2020.102067](https://doi.org/10.1016/j.tre.2020.102067).
- Dyball, M.C. and Seethamraju, R. (2022), "Client use of blockchain technology: exploring its (potential) impact on financial statement audits of Australian accounting firms", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1656-1684, doi: [10.1108/AAAJ-07-2020-4681](https://doi.org/10.1108/AAAJ-07-2020-4681).

- Esmat, A., de Vos, M., Ghiassi-Farrokhfal, Y., Palensky, P. and Epema, D. (2021), "A novel decentralized platform for peer-to-peer energy trading market with blockchain technology", *Applied Energy*, Vol. 282, p. 116123, doi: [10.1016/j.apenergy.2020.116123](https://doi.org/10.1016/j.apenergy.2020.116123).
- Faccia, A. and Mosteanu, N.R. (2019), "Accounting and blockchain technology: from double-entry to triple-entry", *The Business and Management Review*, Vol. 10 No. 2, pp. 108-116.
- Fang, B., Liu, X., Ma, C. and Zhuo, Y. (2023), "Blockchain technology adoption and accounting information quality", *Accounting and Finance*, Vol. 63 No. 4, pp. 4125-4156, doi: [10.1111/acfi.13088](https://doi.org/10.1111/acfi.13088).
- Fischer, D. (2018), "Ethical and professional implications of blockchain accounting ledgers", available at: <https://ssrn.com/abstract=3331009>
- Fraga-Lamas, P. and Fernández-Caramés, T.M. (2019), "A review on blockchain technologies for an advanced and cyber-resilient automotive industry", *IEEE Access*, Vol. 7, pp. 17578-17598, doi: [10.1109/ACCESS.2019.2895302](https://doi.org/10.1109/ACCESS.2019.2895302).
- Fuller, S.H. and Markelevich, A. (2020), "Should accountants care about blockchain?", *Journal of Corporate Accounting and Finance*, Vol. 31 No. 2, pp. 34-46, doi: [10.1002/jcaf.22424](https://doi.org/10.1002/jcaf.22424).
- Gai, W., Gu, Y. and Qin, J. (2022), "Financial automation audit method based on blockchain technology", *Computational Intelligence and Neuroscience*, Vol. 2022, p. 9941585, doi: [10.1155/2022/9941585](https://doi.org/10.1155/2022/9941585).
- Garanina, T., Ranta, M. and Dumay, J. (2022), "Blockchain in accounting research: current trends and emerging topics", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1507-1533, doi: [10.1108/AAAJ-10-2020-4991](https://doi.org/10.1108/AAAJ-10-2020-4991).
- Grigg, I. (2005), "Triple entry accounting", *Journal of Risk and Financial Management*, Vol. 17 No. 2, p. 76, doi: [10.3390/jrfm17020076](https://doi.org/10.3390/jrfm17020076).
- Grosu, V., Botez, D., Melega, A., Kicsi, R., Mihaila, S. and Macovei, A.-G. (2022), "Bibliometric analysis of the transformative synergies between blockchain and accounting in the uprooting of economic criminality", *Entrepreneurship and Sustainability Issues*, Vol. 9 No. 4, pp. 77-105, doi: [10.9770/jesi.2022.9.4\(4\)](https://doi.org/10.9770/jesi.2022.9.4(4)).
- Güdelci, E.N. (2022), "New era in blockchain technology and better accounting information", *Journal of Accounting and Taxation Studies*, Vol. 15 No. 2, pp. 437-461, doi: [10.29067/muvu.1012664](https://doi.org/10.29067/muvu.1012664).
- Hastig, G.M. and Sodhi, M.M.S. (2020), "Blockchain for supply chain traceability: business requirements and critical success factors", *Production and Operations Management*, Vol. 29 No. 4, pp. 935-954, doi: [10.1111/poms.13147](https://doi.org/10.1111/poms.13147).
- Herasymenko, O. and Bachynska, V. (2021), "Blockchain technology for accounting and distribution of contributions from a charitable foundation", *Technology Audit and Production Reserves*, Vol. 5 No. 2(61), pp. 9-14, doi: [10.15587/2706-5448.2021.239019](https://doi.org/10.15587/2706-5448.2021.239019).
- Holub, M. and Johnson, J. (2018), "Bitcoin research across disciplines", *The Information Society*, Vol. 34 No. 2, pp. 114-126, doi: [10.1080/01972243.2017.1414094](https://doi.org/10.1080/01972243.2017.1414094).
- Hughes, L., Dwivedi, Y.K., Misra, S.K., Rana, N.P., Raghavan, V. and Akella, V. (2019), "Blockchain research, practice and policy: applications, benefits, limitations, emerging research themes and research agenda", *International Journal of Information Management*, Vol. 49, pp. 114-129, doi: [10.1016/j.jinfomgt.2019.02.005](https://doi.org/10.1016/j.jinfomgt.2019.02.005).
- Huson, A.Y., Sierra-García, L. and Garcia-Benau, M.A. (2023), "A bibliometric review of information technology, artificial intelligence, and blockchain on auditing", *Total Quality Management and Business Excellence*, Vol. 35 Nos 1/2, pp. 91-113, doi: [10.1080/14783363.2023.2256260](https://doi.org/10.1080/14783363.2023.2256260).
- Jiao, Y., Wang, P., Niyato, D. and Suankaewmanee, K. (2019), "Auction mechanisms in cloud/fog computing resource allocation for public blockchain networks", *IEEE Transactions on Parallel and Distributed Systems*, Vol. 30 No. 9, pp. 1975-1989, doi: [10.1109/TPDS.2019.2900238](https://doi.org/10.1109/TPDS.2019.2900238).
- Juma'h, A.H. and Li, Y. (2023), "The effects of auditors' knowledge, professional skepticism, and perceived adequacy of accounting standards on their intention to use blockchain", *International Journal of Accounting Information Systems*, Vol. 51, p. 100650, doi: [10.1016/j.accinf.2023.100650](https://doi.org/10.1016/j.accinf.2023.100650).

- Kamble, S., Gunasekaran, A. and Arha, H. (2019), "Understanding the blockchain technology adoption in supply chains-Indian context", *International Journal of Production Research*, Vol. 57 No. 7, pp. 2009-2033, doi: [10.1080/00207543.2018.1518610](https://doi.org/10.1080/00207543.2018.1518610).
- Kaushik, V., Tewari, S., Sahasranamam, S. and Hota, P.K. (2023), "Towards a precise understanding of social entrepreneurship: an integrated bibliometric-machine learning based review and research agenda", *Technological Forecasting and Social Change*, Vol. 191, p. 122516, doi: [10.1016/j.techfore.2023.122516](https://doi.org/10.1016/j.techfore.2023.122516).
- Kayikci, Y., Subramanian, N., Dora, M. and Bhatia, M.S. (2020), "Food supply chain in the era of industry 4.0: blockchain technology implementation opportunities and impediments from the perspective of people, process, performance, and technology", *Production Planning and Control*, Vol. 33 Nos 2/3, pp. 301-321, doi: [10.1080/09537287.2020.1810757](https://doi.org/10.1080/09537287.2020.1810757).
- Khelifi, A., Khalil, A.D. and Ehtesham, H. (2023), "Improving the resume verification process of financial professionals using blockchain smart contracts", *AIP Conference Proceedings*, Vol. 2812 No. 1, doi: [10.1063/5.0161365](https://doi.org/10.1063/5.0161365).
- Khudayar Suyunovich, M. and Javlonbek Shakhriyrovich, K. (2022), "Innovative development mechanism of digital transformation processes In regional industry", *Journal of Pharmaceutical Negative Results*, Vol. 13, doi: [10.47750/pnr.2022.13.S08.64](https://doi.org/10.47750/pnr.2022.13.S08.64).
- Kokina, J., Mancha, R. and Pachamanova, D. (2017), "Blockchain: emergent industry adoption and implications for accounting", *Journal of Emerging Technologies in Accounting*, Vol. 14 No. 2, pp. 91-100, doi: [10.2308/jeta-51911](https://doi.org/10.2308/jeta-51911).
- Kolisnyk, O., Hurina, N., Druzhynska, N., Holovchak, H. and Fomina, T. (2023), "Innovative technologies in accounting and auditing: the use of blockchain technology", *Financial and Credit Activity: Problems of Theory and Practice*, Vol. 3 No. 50, pp. 24-41, doi: [10.55643/fcaptop.3.50.2023.4082](https://doi.org/10.55643/fcaptop.3.50.2023.4082).
- Kouhizadeh, M., Saberi, S. and Sarkis, J. (2021), "Blockchain technology and the sustainable supply chain: theoretically exploring adoption barriers", *International Journal of Production Economics*, Vol. 231, p. 107831, doi: [10.1016/j.ijpe.2020.107831](https://doi.org/10.1016/j.ijpe.2020.107831).
- Kowalczyk, M. and Napiecek, R. (2023), "E-governance and blockchain technology in local government", *Zeszyty Teoretyczne Rachunkowości*, Vol. 47 No. 3, pp. 221-238, doi: [10.5604/01.3001.0053.7703](https://doi.org/10.5604/01.3001.0053.7703).
- Kshetri, N. (2018), "Blockchain's roles in meeting key supply chain management objectives", *International Journal of Information Management*, Vol. 39, pp. 80-89, doi: [10.1016/j.ijinfomgt.2017.12.005](https://doi.org/10.1016/j.ijinfomgt.2017.12.005).
- Kuruppu, S.C., Dissanayake, D. and de Villiers, C. (2022), "How can NGO accountability practices be improved with technologies such as blockchain and triple-entry accounting?", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1714-1742, doi: [10.1108/AAAJ-10-2020-4972](https://doi.org/10.1108/AAAJ-10-2020-4972).
- Kwilinski, A. (2019), "Implementation of blockchain technology in accounting sphere", *Transformation of Accounting, Auditing, Reporting, Finance*, Vol. 23 No. 2, pp. 1-6.
- Łada, M. and Martinek-Jaguszewska, K. (2023), "The autonomization of accounting processes", *Zeszyty Teoretyczne Rachunkowości*, Vol. 47 No. 3, pp. 95-111, doi: [10.5604/01.3001.0053.7697](https://doi.org/10.5604/01.3001.0053.7697).
- Lardo, A., Corsi, K., Varma, A. and Mancini, D. (2022), "Exploring blockchain in the accounting domain: a bibliometric analysis", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 9, pp. 204-233, doi: [10.1108/AAAJ-10-2020-4995](https://doi.org/10.1108/AAAJ-10-2020-4995).
- Li, L., Liu, J., Cheng, L., Qiu, S., Wang, W., Zhang, X. and Zhang, Z. (2018), "CreditCoin: a privacy-preserving blockchain-based incentive announcement network for communications of smart vehicles", *IEEE Transactions on Intelligent Transportation Systems*, Vol. 19 No. 7, pp. 2204-2220, doi: [10.1109/TITS.2017.2777990](https://doi.org/10.1109/TITS.2017.2777990).
- Li, X., Jiang, P., Chen, T., Luo, X. and Wen, Q. (2020), "A survey on the security of blockchain systems", *Future Generation Computer Systems*, Vol. 107, pp. 841-853, doi: [10.1016/j.future.2017.08.020](https://doi.org/10.1016/j.future.2017.08.020).

- Lin, Q., Wang, H., Pei, X. and Wang, J. (2019), "Food safety traceability system based on blockchain and EPCIS", *IEEE Access*, Vol. 7, pp. 20698-20707, doi: [10.1109/ACCESS.2019.2897792](https://doi.org/10.1109/ACCESS.2019.2897792).
- Liu, M., Wu, K. and Xu, J.J. (2019), "How will blockchain technology impact auditing and accounting: permissionless versus permissioned blockchain", *Current Issues in Auditing*, Vol. 13 No. 2, pp. A19-A29, doi: [10.2308/cia-52540](https://doi.org/10.2308/cia-52540).
- Liu, X., Zhang, F., Hou, Z., Mian, L., Wang, Z., Zhang, J. and Tang, J. (2023), "Self-supervised learning: generative or contrastive", *IEEE Transactions on Knowledge and Data Engineering*, Vol. 35 No. 1, pp. 857-876, doi: [10.1109/TKDE.2021.3090866](https://doi.org/10.1109/TKDE.2021.3090866).
- Lombardi, R., de Villiers, C., Moscariello, N. and Pizzo, M. (2022), "The disruption of blockchain in auditing – a systematic literature review and an agenda for future research", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1534-1565, doi: [10.1108/AAAJ-10-2020-4992](https://doi.org/10.1108/AAAJ-10-2020-4992).
- Lopez Pérez, G., García Sánchez, I.M. and Zafra Gomez, J.L. (2023), "A systematic literature review and bibliometric analysis of eco-innovation on financial performance: identifying barriers and drivers", *Business Strategy and the Environment*, Vol. 33 No. 2, pp. 1-20, doi: [10.1002/bse.3550](https://doi.org/10.1002/bse.3550).
- Lu, Y., Fu, Q., Xi, X. and Chen, Z. (2020), "Cloud data acquisition and processing model based on blockchain", *Journal of Intelligent and Fuzzy Systems*, Vol. 39 No. 4, pp. 5027-5036.
- McGhin, T., Choo, K.K.R., Liu, C.Z. and He, D. (2019), "Blockchain in healthcare applications: research challenges and opportunities", *Journal of Network and Computer Applications*, Vol. 135, pp. 62-75, doi: [10.1016/j.jnca.2019.02.027](https://doi.org/10.1016/j.jnca.2019.02.027).
- Maffei, M., Casciello, R. and Meucci, F. (2021), "Blockchain technology: uninvestigated issues emerging from an integrated view within accounting and auditing practices", *Journal of Organizational Change Management*, Vol. 34 No. 2, pp. 462-476, doi: [10.1108/JOCM-09-2020-0264](https://doi.org/10.1108/JOCM-09-2020-0264).
- Mezquita, Y., Gil-González, A.B., Martín del Rey, A., Prieto, J. and Corchado, J.M. (2022), "Towards a blockchain-based peer-to-peer energy marketplace", *Energies*, Vol. 15 No. 9, p. 3046.
- Milkau, U. (2023), "Risk of digital assets: developments in regulation and implementation", *Journal of Risk Management in Financial Institutions*, Vol. 16 No. 4, pp. 395-408.
- Mistry, I., Tanwar, S., Tyagi, S. and Kumar, N. (2020), "Blockchain for 5G-enabled IoT for industrial automation: a systematic review, solutions, and challenges", *Mechanical Systems and Signal Processing*, Vol. 135, p. 106382, doi: [10.1016/j.ymssp.2019.106382](https://doi.org/10.1016/j.ymssp.2019.106382).
- Moll, J. and Yigitbasioglu, O. (2019), "The role of internet-related technologies in shaping the work of accountants: new directions for accounting research", *The British Accounting Review*, Vol. 51 No. 6, p. 100833, doi: [10.1016/j.bar.2019.04.002](https://doi.org/10.1016/j.bar.2019.04.002).
- Monterrey Mayoral, J. and Rabazo Martínez, A.E. (2025), "How are accounting irregularities examined in Spanish insolvency proceedings? An empirical análisis", *Revista de Contabilidad*, Vol. 28 No. 1, pp. 150-165, doi: [10.6018/rcsar.577941](https://doi.org/10.6018/rcsar.577941).
- Möser, M., Böhme, R. and Breuker, D. (2013), "An inquiry into money laundering tools in the Bitcoin ecosystem", *Proceedings of the 2013 ECrime Researchers Summit (ECrime)*.
- Mosteanu, N.R. and Faccia, A. (2020), "Digital systems and new challenges of financial management – FinTech, XBRL, blockchain and cryptocurrencies", *Journal of Management Systems-Quality Access to Success*, Vol. 21 No. 174, pp. 159-166.
- Murray, J. (2022), "The coming world of blockchain a primer for accountants and auditors", *The CPA Journal*, Vol. 88 No. 6, p. 20.
- Nakamoto, S. (2008), "Bitcoin: a peer-to-peer electronic cash system", available at: www.bitcoin.org
- Navarro-Galera, A., Gómez-Miranda, M.E., Lara-Rubio, J. and Buendía-Carrillo, D. (2024), "Investigación empírica para identificar indicadores de alerta temprana de insolvencia en pequeñas y medianas empresas (PYMES): empirical research to identify early warning indicators of insolvency in small and medium-sized enterprises (SMEs)", *Revista de Contabilidad*, Vol. 27 No. 2, pp. 344-356, doi: [10.6018/rcsar.554181](https://doi.org/10.6018/rcsar.554181).

- Nguyen, L.T.P., Aleenajitpong, N. and Boon-Itt, S. (2024), "Emerging trends of environmental accounting research: a science mapping approach", *Journal of Accounting and Organizational Change*, ahead-of-print, doi: [10.1108/JAOC-03-2023-0062](https://doi.org/10.1108/JAOC-03-2023-0062).
- O'Leary, D.E. (2018), "Open information enterprise transactions: business intelligence and wash and spoof transactions in blockchain and social commerce", *Intelligent Systems in Accounting, Finance and Management*, Vol. 25 No. 3, pp. 148-158, doi: [10.1002/isaf.1438](https://doi.org/10.1002/isaf.1438).
- Oludapo, S., Carroll, N. and Helfert, M. (2024), "Why do so many digital transformations fail? A bibliometric analysis and future research agenda", *Journal of Business Research*, Vol. 174, p. 114528, doi: [10.1016/j.jbusres.2024.114528](https://doi.org/10.1016/j.jbusres.2024.114528).
- Omar, A.A., Bhuiyan, M.Z.A., Basu, A., Kiyomoto, S. and Rahman, M.S. (2019), "Privacy-friendly platform for healthcare data in cloud based on blockchain environment", *Future Generation Computer Systems*, Vol. 95, pp. 511-521, doi: [10.1016/j.future.2018.12.044](https://doi.org/10.1016/j.future.2018.12.044).
- Oteo, O.V., García-Torea, N. and de la Cuesta-González, M. (2025), "Corporate corruption management: a proposal for an accountability framework", *Revista de Contabilidad*, Vol. 28 No. 1, pp. 96-113, doi: [10.6018/rcsar.543701](https://doi.org/10.6018/rcsar.543701).
- Pacioli, L. (1514), "Paciolo on Accounting (Summa de Arithmetica, Geometria, Proportioni e Proportionalita: Distinctio Nona—Tractatus XI, Particularis de Computis et Scripturis".
- Page, M.J., McKenzie, J.E., Bossuyt, P.M., Boutron, I., Hoffmann, T.C., Mulrow, C.D., Shamseer, L., Tetzlaff, J.M. and Moher, D. (2021), "Updating guidance for reporting systematic reviews: development of the PRISMA 2020 statement", *Journal of Clinical Epidemiology*, Vol. 134, pp. 103-112.
- Pan, J., Wang, J., Hester, A., Alqerm, I., Liu, Y. and Zhao, Y. (2019), "EdgeChain: an edge-IoT framework and prototype based on blockchain and smart contracts", *IEEE Internet of Things Journal*, Vol. 6 No. 3, pp. 4719-4732, doi: [10.1109/JIOT.2018.2878154](https://doi.org/10.1109/JIOT.2018.2878154).
- Pascual Pedreño, E.P., Gelashvili, V. and Nebreda, L.P. (2021), "Blockchain and its application to accounting", *Intangible Capital*, Vol. 17 No. 1, pp. 1-16, doi: [10.3926/IC.1522](https://doi.org/10.3926/IC.1522).
- Pflueger, D., Kornberger, M. and Mouritsen, J.A.N. (2022), "What is blockchain accounting? A critical examination in relation to organizing, governance, and trust", *European Accounting Review*, Vol. 33, pp. 1139-1164, doi: [10.1080/09638180.2022.2147973](https://doi.org/10.1080/09638180.2022.2147973).
- Pimentel, E. and Boulianne, E. (2020), "Blockchain in accounting research and practice: current trends and future opportunities", *Accounting Perspectives*, Vol. 19 No. 4, pp. 325-361, doi: [10.1111/1911-3838.12239](https://doi.org/10.1111/1911-3838.12239).
- Pimentel, E., Boulianne, E., Eskandari, S. and Clark, J. (2021), "Systemizing the challenges of auditing blockchain-based assets", *Journal of Information Systems*, Vol. 35 No. 2, pp. 61-75, doi: [10.2308/ISYS-19-007](https://doi.org/10.2308/ISYS-19-007).
- Pires, R., Alves, M., do, C. and Lima Rodrigues, L. (2024), "Cuarenta años de publicaciones en contabilidad de gestión estratégica: Explorando la estructura conceptual a través del análisis de co-palabras: forty years of publications on strategic management accounting: exploring the conceptual structure through co-word analysis", *Revista de Contabilidad*, Vol. 27 No. 2, pp. 288-306, doi: [10.6018/rcsar.491521](https://doi.org/10.6018/rcsar.491521).
- Pope, K.R. and Black, L. (2023), "Understanding blockchain", *Strategic Finance*, Vol. 104 No. 9, pp. 38-45.
- Pournader, M., Shi, Y., Seuring, S. and Koh, S.C.L. (2020), "Blockchain applications in supply chains, transport and logistics: a systematic review of the literature", *International Journal of Production Research*, Vol. 58 No. 7, pp. 2063-2081, doi: [10.1080/00207543.2019.1650976](https://doi.org/10.1080/00207543.2019.1650976).
- Preda, A., Valk, J. and Xu, R. (2023), "Frail hope and new frontiers", *Anthropology Today*, Vol. 39 No. 4, pp. 1-2, doi: [10.1111/1467-8322.12823](https://doi.org/10.1111/1467-8322.12823).

- Qasim, A. and Kharbat, F.F. (2020), "Blockchain technology, business data analytics, and artificial intelligence: use in the accounting profession and ideas for inclusion into the accounting curriculum", *Journal of Emerging Technologies in Accounting*, Vol. 17 No. 1, pp. 107-117, doi: [10.2308/jeta-52649](https://doi.org/10.2308/jeta-52649).
- Queiroz, M.M. and Fosso Wamba, S. (2019), "Blockchain adoption challenges in supply chain: an empirical investigation of the main drivers in India and the USA", *International Journal of Information Management*, Vol. 46, pp. 70-82, doi: [10.1016/j.ijinfomgt.2018.11.021](https://doi.org/10.1016/j.ijinfomgt.2018.11.021).
- Rabbani, M.R. (2024), "Impact of digital advancements on accounting, auditing and reporting literature: insights, practice implications and future research directions", *Journal of Accounting and Organizational Change*, ahead-of-print, doi: [10.1108/JAOC-01-2024-0028](https://doi.org/10.1108/JAOC-01-2024-0028).
- Reyna, A., Martín, C., Chen, J., Soler, E. and Díaz, M. (2018), "On blockchain and its integration with IoT: challenges and opportunities", *Future Generation Computer Systems*, Vol. 88, pp. 173-190, doi: [10.1016/j.future.2018.05.046](https://doi.org/10.1016/j.future.2018.05.046).
- Risius, M. and Spohrer, K. (2017), "A blockchain research framework: what we (don't) know, where we go from here, and how we will get there", *Business and Information Systems Engineering*, Vol. 59 No. 6, pp. 385-409, doi: [10.1007/s12599-017-0506-0](https://doi.org/10.1007/s12599-017-0506-0).
- Robb, L., Deane, F. and Tranter, K. (2021), "The blockchain conundrum: humans, community regulation and chains", *Law, Innovation and Technology*, Vol. 13 No. 2, pp. 355-376, doi: [10.1080/17579961.2021.1977215](https://doi.org/10.1080/17579961.2021.1977215).
- Saberi, S., Kouhizadeh, M., Sarkis, J. and Shen, L. (2019), "Blockchain technology and its relationships to sustainable supply chain management", *International Journal of Production Research*, Vol. 57 No. 7, pp. 2117-2135, doi: [10.1080/00207543.2018.1533261](https://doi.org/10.1080/00207543.2018.1533261).
- Sabuncu, B. (2022), "The effects of digital transformation on the accounting profession", *Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, Vol. 15 No. 1, pp. 103-115, doi: [10.25287/ohuiibf.974840](https://doi.org/10.25287/ohuiibf.974840).
- Sangster, A. (2016), "The genesis of double entry bookkeeping", *The Accounting Review*, Vol. 91 No. 1, pp. 299-315.
- Sangster, A. and Scataglinibelghitar, G. (2010), "Luca Pacioli: the father of accounting education", *Accounting Education*, Vol. 19 No. 4, pp. 423-438.
- Sanz-Martin, L., Parra, J., Corchado, J., Zafra-Gómez, E. and Castillo-Ramos, V. (2025), "The digital age of accounting: integrating AI, big data, and blockchain: a systematic literature review and bibliometric analysis", *Revista Española de Financiación y Contabilidad*, forthcoming.
- Schmitz, J. and Leoni, G. (2019), "Accounting and auditing at the time of blockchain technology: a research agenda", *Australian Accounting Review*, Vol. 29 No. 2, pp. 331-342, doi: [10.1111/auar.12286](https://doi.org/10.1111/auar.12286).
- Secinaro, S., Dal Mas, F., Brescia, V. and Calandra, D. (2021), "Blockchain in the accounting, auditing and accountability fields: a bibliometric and coding analysis", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 9, pp. 168-203, doi: [10.1108/AAAJ-10-2020-4987](https://doi.org/10.1108/AAAJ-10-2020-4987).
- Şeyma Alkan, B., Bir, Y., Olarak, P., Zamanlı, G., Zinciri, B. and Sistemi, M. (2021), "Muhasebe ve Finansman Dergisi-Ağustos 2021 Özel Sayı Real-Time Blockchain Accounting System As A New Paradigm **".
- Shapovalova, A., Kuzmenko, O., Polishchuk, O., Larikova, T. and Myronchuk, Z. (2023), "Modernization of the national accounting and auditing system using digital transformation tools", *Financial and Credit Activity: Problems of Theory and Practice*, Vol. 4 No. 51, pp. 33-52, doi: [10.55643/fcaptop.4.51.2023.4102](https://doi.org/10.55643/fcaptop.4.51.2023.4102).
- Singh, N., Kapur, B., Antony, J., Cudney, E.A. and Furterer, S.L. (2023), "Analysing 20 years of the TQM&BE journal: a bibliometric approach", *Total Quality Management and Business Excellence*, Vol. 34 Nos 13/14, pp. 1703-1718, doi: [10.1080/14783363.2023.2202309](https://doi.org/10.1080/14783363.2023.2202309).
- Soll, J. (2014), "El ajuste de cuentas: la responsabilidad financiera y el aumento y la caída de las naciones", *Libros Básicos (AZ)*.

- Souri, A., Al-Masri, E. and Kumari, S. (2023), "Blockchain architecture and methodologies for Internet of Things environment", *Security and Privacy*, Vol. 6 No. 2, p. e299, doi: [10.1002/spy2.299](https://doi.org/10.1002/spy2.299).
- Spanò, R., Massaro, M., Ferri, L., Dumay, J. and Schmitz, J. (2022), "Blockchain in accounting, accountability and assurance: an overview", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1493-1506, doi: [10.1108/AAAJ-06-2022-5850](https://doi.org/10.1108/AAAJ-06-2022-5850).
- Stein Smith, S. (2018), "Implications of next step blockchain applications for accounting and legal practitioners: a case study", *Australasian Accounting, Business and Finance Journal*, Vol. 12 No. 4, pp. 77-90.
- Szabo, N. (1994), "Smart contracts", Unpublished manuscript.
- Szabo, N. (1996), "Smart contracts: building blocks for digital markets", *Extropy: The Journal of Transhumanist Thought*, (16), Vol. 18 No. 2, p. 28.
- Szabo, N. (1997), "Formalizing and securing relationships on public networks", *First Monday*, Vol. 2 No. 9, p. 548, doi: [10.5210/fm.v2i9.548](https://doi.org/10.5210/fm.v2i9.548).
- Tan, B.S. and Low, K.Y. (2017), "Bitcoin-its economics for financial reporting", *Australian Accounting Review*, Vol. 27 No. 2, pp. 220-227.
- Tiron-Tudor, A., Deliu, D., Farcane, N. and Dontu, A. (2021), "Managing change with and through blockchain in accountancy organizations: a systematic literature review", *Journal of Organizational Change Management*, Vol. 34 No. 2, pp. 477-506, doi: [10.1108/JOCM-10-2020-0302](https://doi.org/10.1108/JOCM-10-2020-0302).
- Treiblmaier, H. (2018), "The impact of the blockchain on the supply chain: a theory-based research framework and a call for action", *Supply Chain Management: An International Journal*, Vol. 23 No. 6, pp. 545-559, doi: [10.1108/SCM-01-2018-0029](https://doi.org/10.1108/SCM-01-2018-0029).
- Tschorsch, F. and Scheuermann, B. (2016), "Bitcoin and beyond: a technical survey on decentralized digital currencies", *IEEE Communications Surveys and Tutorials*, Vol. 18 No. 3, pp. 2084-2123, doi: [10.1109/COMST.2016.2535718](https://doi.org/10.1109/COMST.2016.2535718).
- Tudoran, A.S., Boicu, B.E., Costuleanu, C.L. and Ignat, G. (2022), "Assessments of cryptocurrency accounting from an international perspective", *Lucrări Științifice*, Vol. 65 No. 2.
- Tyma, B., Dhillon, R., Sivabalan, P. and Wieder, B. (2022), "Understanding accountability in blockchain systems", *Accounting, Auditing and Accountability Journal*, Vol. 35 No. 7, pp. 1625-1655, doi: [10.1108/AAAJ-07-2020-4713](https://doi.org/10.1108/AAAJ-07-2020-4713).
- Ucieda Blanco, J.L., Santos Cabalgante, B. and Romero Fúnez, D. (2025), "The role and characteristics of national accounting standard setters in the European Union: a comparative analysis", *Revista de Contabilidad*, Vol. 28 No. 1, pp. 166-180, doi: [10.6018/rcsar.437971](https://doi.org/10.6018/rcsar.437971).
- Urdaneta Camachoa, R., Martín Vallespín, E., Guevara Pérez, J.C. and Llena Macarulla, F. (2025), "'Creative accounting' in the Spanish professional football league: an attempt to dodge the rules economic control?", *Revista de Contabilidad*, Vol. 28 No. 1, pp. 181-193, doi: [10.6018/rcsar.553911](https://doi.org/10.6018/rcsar.553911).
- van der Linden, T. and Shirazi, T. (2023), "Markets in crypto-assets regulation: does it provide legal certainty and increase adoption of crypto-assets?", *Financial Innovation*, Vol. 9 No. 1, p. 22, doi: [10.1186/s40854-022-00432-8](https://doi.org/10.1186/s40854-022-00432-8).
- Van Eck, N. and Waltman, L. (2010), "Software survey: VOSviewer, a computer program for bibliometric mapping", *Scientometrics*, Vol. 84 No. 2, pp. 523-538, doi: [10.1007/s11192-009-0146-3](https://doi.org/10.1007/s11192-009-0146-3).
- Wamba, S.F. and Queiroz, M.M. (2020), "Blockchain in the operations and supply chain management: benefits, challenges and future research opportunities", *International Journal of Information Management*, Vol. 52, p. 102064, doi: [10.1016/j.ijinfomgt.2019.102064](https://doi.org/10.1016/j.ijinfomgt.2019.102064).
- Wang, J. (2023), "Research on the construction of accounting information audit quality control system based on blockchain", *Security and Privacy*, Vol. 6 No. 2, p. e227, doi: [10.1002/spy2.227](https://doi.org/10.1002/spy2.227).
- Wang, Y. and Kogan, A. (2018), "Designing confidentiality-preserving blockchain-based transaction processing systems", *International Journal of Accounting Information Systems*, Vol. 30, pp. 1-18, doi: [10.1016/j.accinf.2018.06.001](https://doi.org/10.1016/j.accinf.2018.06.001).

- Wang, Y., Han, J.H. and Beynon-Davies, P. (2019), "Understanding blockchain technology for future supply chains: a systematic literature review and research agenda", *Supply Chain Management: An International Journal*, Vol. 24 No. 1, pp. 62-84, doi: [10.1108/SCM-03-2018-0148](https://doi.org/10.1108/SCM-03-2018-0148).
- Wright, A. and De Filippi, P. (2015), "Decentralized blockchain technology and the rise of lex cryptographia", SSRN 2580664.
- Xia, Q., Sifah, E.B., Smahi, A., Amofa, S. and Zhang, X. (2017a), "BBDS: blockchain-based data sharing for electronic medical records in cloud environments", *Information (Information)*, Vol. 8 No. 2, p. 44, doi: [10.3390/info8020044](https://doi.org/10.3390/info8020044).
- Xia, Q., Sifah, E.B., Asamoah, K.O., Gao, J., Du, X. and Guizani, M. (2017b), "MeDShare: trust-less medical data sharing among cloud service providers via blockchain", *IEEE Access*, Vol. 5, pp. 14757-14767, doi: [10.1109/ACCESS.2017.2730843](https://doi.org/10.1109/ACCESS.2017.2730843).
- Xie, J., Tang, H., Huang, T., Yu, F.R., Xie, R., Liu, J. and Liu, Y. (2019), "A survey of blockchain technology applied to smart cities: research issues and challenges", *IEEE Communications Surveys and Tutorials*, Vol. 21 No. 3, pp. 2794-2830, doi: [10.1109/COMST.2019.2899617](https://doi.org/10.1109/COMST.2019.2899617).
- Yermack, D. (2017), "Corporate governance and blockchains", *Review of Finance*, Vol. 21 No. 1, pp. 7-31.
- Yu, H. (2023), "Application of blockchain technology in the data processing security system of financial enterprises", *Security and Privacy*, Vol. 6 No. 2, p. e230, doi: [10.1002/spy2.230](https://doi.org/10.1002/spy2.230).
- Yu, T., Lin, Z. and Tang, Q. (2018), "Blockchain: the introduction and its application in financial accounting", *Journal of Corporate Accounting and Finance*, Vol. 29 No. 4, pp. 37-47, doi: [10.1002/jcaf.22365](https://doi.org/10.1002/jcaf.22365).
- Zaid, O.A. (2000), "Were Islamic records precursors to accounting books based on the Italian method?", *Accounting Historians Journal*, Vol. 27 No. 1, pp. 73-90, doi: [10.2308/0148-4184.27.1.73](https://doi.org/10.2308/0148-4184.27.1.73).
- Zayed, L.M.M. and Othman, O.H. (2023), "Effect of blockchain technology in innovating accountants' skills: a multimethodology study in the industrial companies listed on the Amman stock exchange", *Journal of Innovation and Entrepreneurship*, Vol. 12 No. 1, p. 44, doi: [10.1186/s13731-023-00312-0](https://doi.org/10.1186/s13731-023-00312-0).
- Zhang, Y., Pourroostaei Ardakani, S. and Han, W. (2021), "Smart ledger: the blockchain-based accounting information recording protocol", *Journal of Corporate Accounting and Finance*, Vol. 32 No. 4, pp. 147-157, doi: [10.1002/jcaf.22515](https://doi.org/10.1002/jcaf.22515).
- Zhao, L., Zhong, L. and Zhang, J. (2023), "Traceable one-time address solution to the interactive blockchain for digital museum assets", *Information Sciences*, Vol. 625, pp. 157-174, doi: [10.1016/j.ins.2022.12.084](https://doi.org/10.1016/j.ins.2022.12.084).
- Zhao, G., Liu, S., Lopez, C., Lu, H., Elgueta, S., Chen, H. and Boshkoska, B.M. (2019), "Blockchain technology in agri-food value chain management: a synthesis of applications, challenges and future research directions", *Computers in Industry*, Vol. 109, pp. 83-99, doi: [10.1016/j.compind.2019.04.002](https://doi.org/10.1016/j.compind.2019.04.002).

Further reading

- Demirkan, S., Demirkan, I. and McKee, A. (2020), "Blockchain technology in the future of business cyber security and accounting", *Journal of Management Analytics*, Vol. 7 No. 2, pp. 189-208, doi: [10.1080/23270012.2020.1731721](https://doi.org/10.1080/23270012.2020.1731721).
- Erkin, Ö.Ü. and Güdelci, N. (2022), "Muhasabe ve Vergi Uygulamaları Dergisi Ankara SMMMO 437 new era in blockchain technology and better accounting information".
- Kokina, J., Mancha, R. and Pachamanova, D. (2017), "Blockchain: emergent industry adoption and implications for accounting", *Journal of Emerging Technologies in Accounting*, Vol. 14 No. 2, pp. 91-100, doi: [10.2308/jeta-51911](https://doi.org/10.2308/jeta-51911).
- Li, C. (2023), "Application research on blockchain technology in accounting system", *2023 International Conference on Evolutionary Algorithms and Soft Computing Techniques (EASCT)*, Bengaluru, India, pp. 1-6, doi: [10.1109/EASCT59475.2023.10392846](https://doi.org/10.1109/EASCT59475.2023.10392846).

- Mishra, N., Bharti, T., Tiwari, A.K. and Pfajfar, G. (2024), "Public and scholarly interest in social robots: an investigation through Google trends, bibliometric analysis, and systematic literature review", *Technological Forecasting and Social Change*, Vol. 206, p. 123578, doi: [10.1016/j.techfore.2024.123578](https://doi.org/10.1016/j.techfore.2024.123578).
- Pâmella de Andrade Simões, M., Albuquerque Cavalcanti, J., Ferreira Marques de Melo, J. and Queiroz Reis, C. (2021), "Benefícios do uso da tecnologia Blockchain como instrumento para a auditoria contábil", *Revista Ambiente Contábil - Universidade Federal Do Rio Grande Do Norte*, Vol. 13 No. 1, pp. 39-53, doi: [10.21680/2176-9036.2021v13n1id19535](https://doi.org/10.21680/2176-9036.2021v13n1id19535).
- Sorin Tudoran, A., Boicu, B.-E., Costuleanu, C.L. and Ignat, G. (2022), "Assessments of cryptocurrency accounting from an international perspective", *Lucrări Științifice*, Vol. 65 No. 2.
- Zhang, Y., Xiong, F., Xie, Y., Fan, X. and Gu, H. (2020), "The impact of artificial intelligence and blockchain on the accounting profession", *IEEE Access*, Vol. 8, pp. 110461-110477, doi: [10.1109/ACCESS.2020.3000505](https://doi.org/10.1109/ACCESS.2020.3000505).

About the authors

Laura Sanz Martín is a researcher at the BISITE Research Group at the University of Salamanca. She specializes in statistics, artificial intelligence, data analytics, digital innovation, bibliometric analysis and systematic literature review methodologies. Laura has contributed to several high-impact publications in the fields of technological forecasting and social change. Her research focuses on exploring artificial intelligence applied to different fields, such as economics, sustainability and accounting.

Germán López Pérez is a PhD candidate at the University of Granada, specializing in business administration with a focus on corporate sustainability and eco-innovation. His research explores the development of sustainable business practices and the implementation of environmental strategies within various industries. With a strong academic background and practical experience in environmental management, German aims to contribute to the advancement of knowledge in sustainable development. He has published several papers on corporate environmental performance and is dedicated to promoting sustainability through academic research and practical applications. German is passionate about finding innovative solutions to address global environmental challenges.

Javier Parra-Domínguez is a researcher at the BISITE Research Group at the University of Salamanca. He has extensive experience in digital innovation and data analytics. Javier's work primarily involves conducting advanced research in the fields of technological forecasting and the impact of digital transformation on business strategies. He has co-authored several influential articles and participated in numerous projects funded by national and international agencies. Javier holds a PhD in computer science and is dedicated to bridging the gap between academic research and practical applications in the industry.

José Luis Zafra Gómez is a Professor at the University of Granada, specifically in the Department of Accounting and Finance within the Faculty of Economics and Business. He holds a PhD in Economic and Business Sciences from the University of Granada, where he also completed his undergraduate studies in Business Administration and Management. His academic and research interests focus on public sector accounting, financial management and the evaluation of municipal financial conditions. As the Director of his department, he has contributed significantly to the fields of managerial accounting and public administration, guiding numerous research projects and doctoral theses. He has been the editor in chief of *Spanish Accounting Review* since October 2024. His research work is well-recognized, with publications cited above the average for his field. José Luis Zafra Gómez is the corresponding author and can be contacted at: jlzafra@ugr.es